

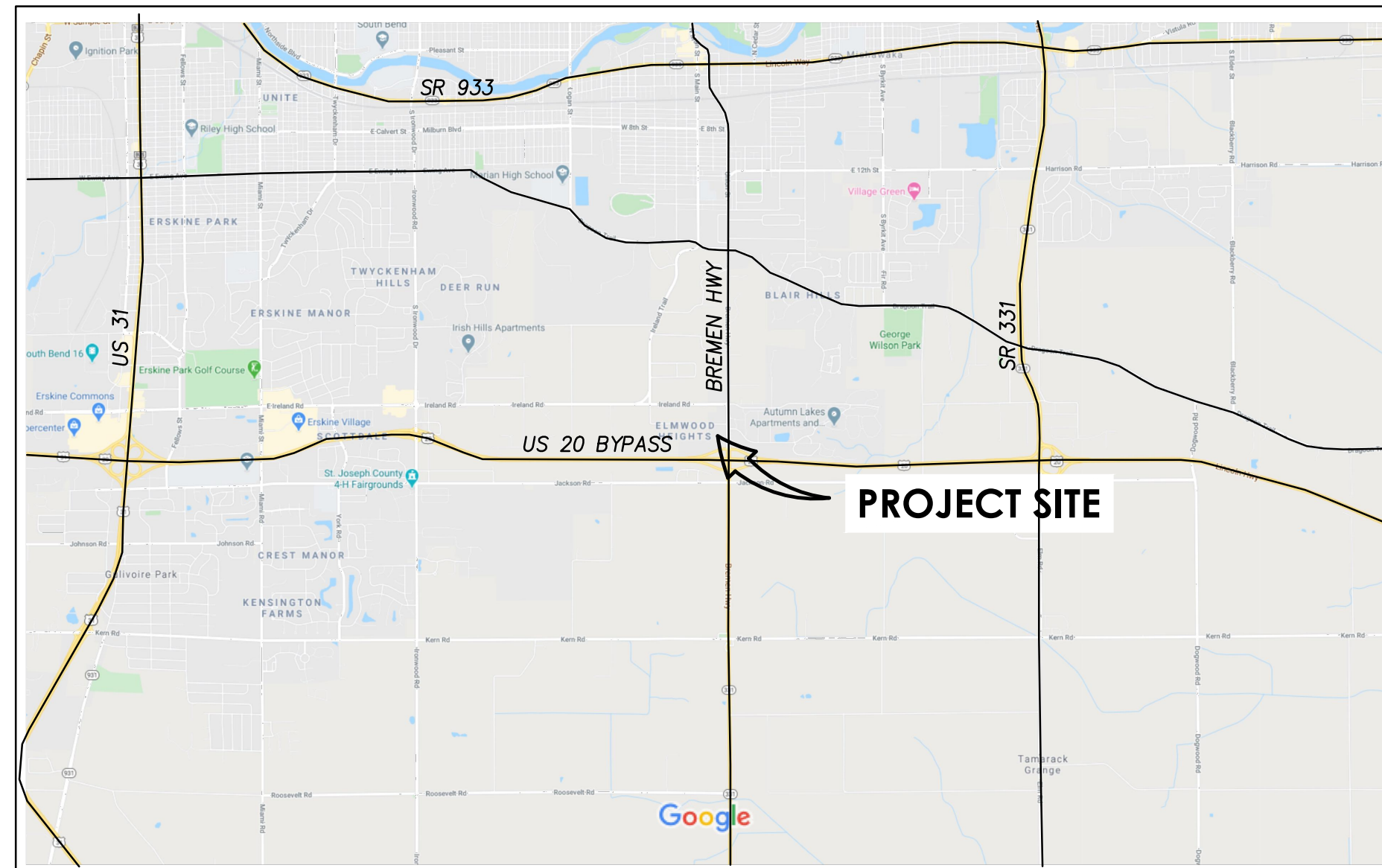
FINAL SITE DEVELOPMENT PLANS

FOR

TACO BELL

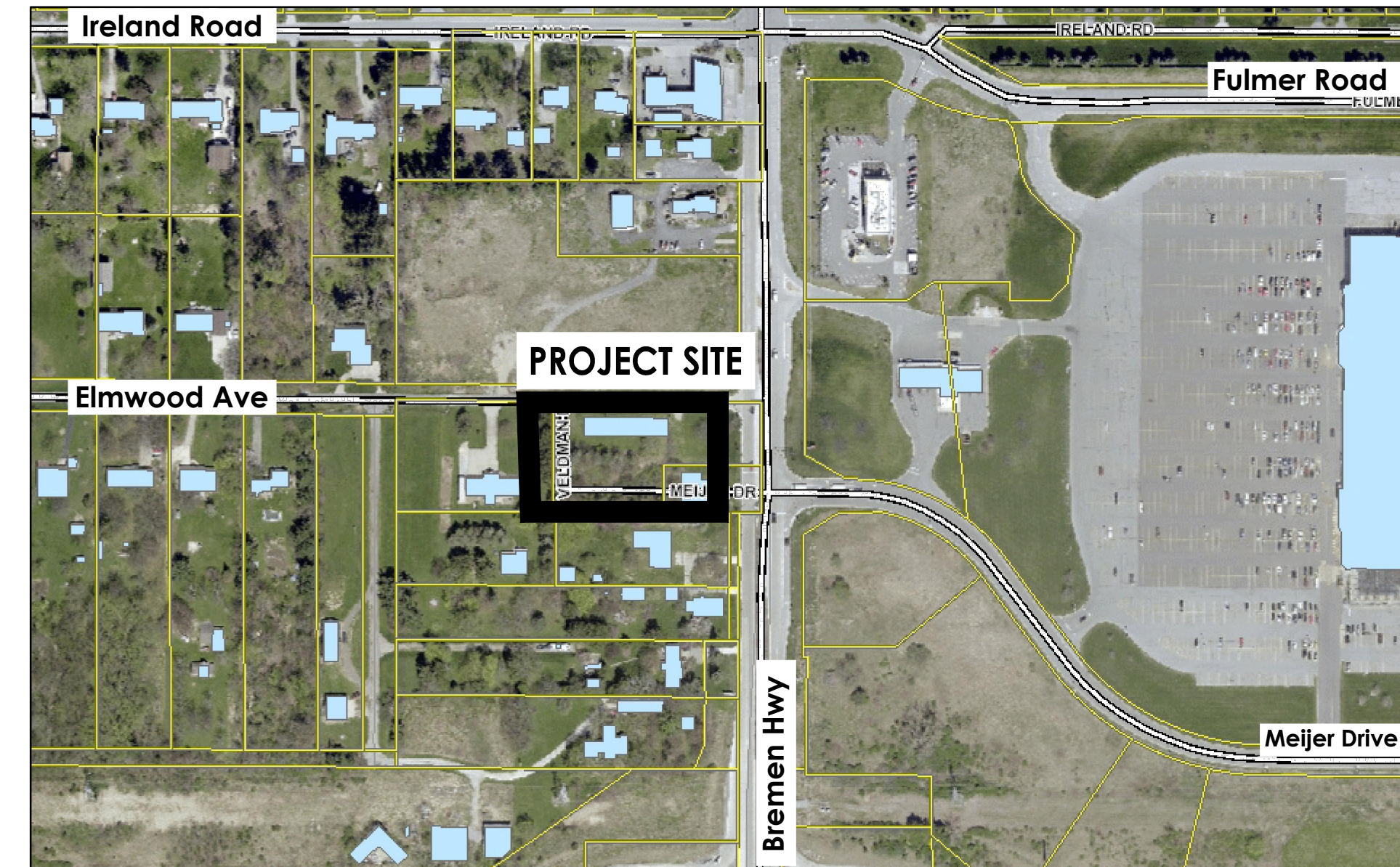
3615 BREMEN HIGHWAY

SECTION 28, TOWNSHIP 37 NORTH, RANGE 3 EAST, PENN TOWNSHIP, CITY OF MISHAWAKA, ST. JOSEPH COUNTY INDIANA



VICINITY MAP
SCALE: 1"=2,000'

SOURCE: GOOGLE MAPS



LOCATION MAP
SCALE: 1"=400'

SOURCE: ST. JOSEPH COUNTY GIS

UTILITY CONTACTS	
Gas	NIPSCO 1039 East Pennsylvania Avenue, South Bend, IN 46601 Contact: Jonathan Erdahl (574) 800-6132
Electric	Mishawaka Utilities, Electric Department 1646 East 12th Street, Mishawaka, IN 46544 Contact: Kevin Wasmer (574) 258-1717
Telephone	AT&T 307 South Main Street, South Bend, IN 46601 Contact: Thomas Pendergrass (574) 237-8822
Fiber Optics	St. Joe Valley Metronet Commerce Center, Suite 305 401 East Colfax Avenue, South Bend, IN 46617 Contact: Ben Hudson (574) 986-5353
Cable	Comcast 1920 E. McKinley Avenue, Mishawaka, IN 46545 Contact: Jay Costello (574) 789-1039
Water	Mishawaka Utilities, Water Department 401 East Jefferson Boulevard, Mishawaka, IN 46545 Contact: Dave Majewski (574) 258-1652
Sewer, Streets	City of Mishawaka Engineering Department 600 East 3rd Street, Mishawaka, IN 46544 Contact: Christine Jamrose, PE (574) 258-1619



Call 811 OR 1-800-382-5544
24 Hours a Day, 7 Days a Week

OWNER
Delight TB Indiana, LLC
PO Box 780023
Wichita, KS 67278
(617) 233-7114
rkrumholz@delightrg.com

SURVEYOR/CIVIL ENGINEER
Abonmarche Consultants, Inc.
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South Bend, IN 46601
(574) 232-8700
mhuber@abonmarche.com

DEVELOPER
Delight TB Indiana, LLC
PO Box 780023
Wichita, KS 67278
(617) 233-7114
rkrumholz@delightrg.com

ARCHITECT
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1950 Craig Road, Ste. 300
St. Louis, MO 63146
(314) 415-2400
bbaquet@arcv.com

SHEET INDEX		
Sheet Number	Description	Latest Revision
C0.0	Cover Sheet & Index	
C1.0	Construction Notes & Specifications	
C2.0	Existing Conditions Map & Removals Plan	
C3.0	Site Plan	
C4.0	Utilities Plan	
C5.0	Grading Plan	
C6.0-C6.1	Drainage Plan	
C7.0	Landscape Plan	
C7.1	Lighting Plan	
C8.0	General Details	
C8.1	Utility Details	
C8.2	Sewer Details	
C9.0-C9.1	Erosion Control Plan & Details	

2	UPDATE ADDRESS	DEF	8/10/20
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**SHEET C3.0 - SITE PLAN
CONSTRUCTION NOTES**

- Contractor shall obtain all required local, state and federal permits except for the IDEM Rule 5 Construction/Land Disturbance permit that will be obtained by the Owner.
- Contractor shall follow the current Indiana Rule 5 storm water quality guidelines for controlling soil erosion and controlling and treating nonpoint source sediment laden runoff. See Erosion Control Plan, Sheets C9.0-C9.1.
- Contractor shall request existing utility location from Indiana 811 prior to commencing construction.
- Damage to public and private property shall be repaired to equal or better condition at no additional cost to the Owner.
- No streets shall be closed without prior approval from the local municipality.
- Contractor shall protect the work and the safety of the public and shall provide, erect and maintain barricades, signals, signs and other traffic control devices in accordance with the Indiana Manual on Uniform Traffic Control Devices.
- Contractor shall follow "2020 Indiana Department of Transportation Standard Specifications" for pavement materials and installation procedures.
- See "Miscellaneous Construction Details", Sheet C8.1 for additional construction notes and details of curb, sidewalk, pavement, sidewalk ramps, signs and pavement markings, including ADA accessible spaces.
- Contractor shall construct sidewalks, ramps, parking spaces and ADA accessible areas in accordance with the current ADA standards.
- Sign designations from the U.S. Dept. of Transportation Federal Highway Administration "Manual on Uniform Traffic Control Devices" (MUTCD).
- Radial are noted along the drive centerline. Offset from centerline to determine curb alignment along back of parking bays, unless noted otherwise.
- Parking spaces along curve are radial with a minimum width of 9'. ADA access aisles are minimum 5' wide.
- Curb radii noted on the site layout plan are dimensioned along the back of curb.
- Thicken concrete pavement adjacent to HMA pavement, See Detail, Sheet C8.0.
- Contractor shall bring Drawing discrepancies and conflicts to the attention of the Engineer as soon as they are noticed, for clarifications and revisions as necessary.
- Contractor shall prepare Record Drawings with field locations and elevations upon completion of the work for submittal to the Engineer.

**SHEET C4.0 - UTILITIES PLAN
CONSTRUCTION NOTES**

- For additional construction notes including material and testing specifications and for construction details see "Utility Details," Sheet C8.1; and "Sewer Details," Sheet C8.2. For underground storage system, See "Chamber Details," Sheet C6.1.
- Contractor is responsible for having existing underground utilities located and field confirming locations and depths prior to commencing construction.
- Contractor shall coordinate utility service locations and depths in the R/W with utility companies prior to installation.
- Contractor shall verify utility service locations and depths at the building with the Architect prior to installation.
- Contractor shall coordinate with utility companies as necessary if service interruption is required.
- Materials, construction and testing shall be in accordance with the current construction standards for City of Mishawaka.
- Contractor shall verify the water table depth and include dewatering costs in the Bid. The water table shall be lowered to at least 12 inches below the lowest pipe invert prior to pipe installation.
- Maintain minimum 10 feet clear of horizontal separation between sewer and water pipes. Maintain minimum 18 inches clear of vertical separation at sewer and water pipe crossings. If clearances cannot be met, sewer shall be water grade pipe in accordance with AWWA standards. At crossings, water grade sewer pipe shall extend a minimum of 10 feet past each side of the crossing, and one full length of water pipe shall be centered at the crossing.
- Maintain minimum 5 feet of cover at water mains & services.
- Unsuitable material that may affect the structural integrity of the pipe shall be replaced or treated to support the anticipated loads.
- Storm and sanitary sewer castings shall be imprinted with the notices as specified on the construction details.
- Remove sediment buildup from storm structures prior to Owner's acceptance of the Work.
- Roof downspouts shall connect to the storm sewer. It is the Contractor's responsibility to review the Arch. plans and confirm downspout locations.
- Utilities other than sewer and water shall be installed underground and placed in PVC conduit where located under pavement sidewalk and curb.

**SHEETS C5.0, C6.0 - C6.1 -
GRADING & DRAINAGE PLAN
CONSTRUCTION NOTES**

- Contractor shall remove topsoil and stockpile the material onsite at a location approved by the Owner. Place a minimum of 4 inches of topsoil on all disturbed areas outside the building and parking areas.
- All fill material shall be placed and compacted in accordance with the geotechnical report.
- Prior to commencing paving operations, Contractor shall proof roll exposed subgrade with a geotechnical engineer or qualified representative to witness the work. Excavate unsuitable soil and backfill and compact with suitable material capable of supporting the anticipated loads.
- Place site grading backfill in maximum six inch lifts and compact to 100% Standard Proctor to the top of subgrade.
- Finished grades at building doorways shall match the building finished floor elevation, unless otherwise noted.
- Contractor is responsible for meeting ADA guidelines at sidewalks and parking areas.
- The proposed contours and spot elevations on this Drawing show grading intent only. Contractor is responsible for confirming that the provided grading plan maintains positive drainage to prevent ponded water or encroachment onto adjacent properties; and shall contact the Engineer if additional grades are needed, if the design does not provide positive drainage, or if any discrepancies/conflicts are found.

**SHEET C7.0 - LANDSCAPE PLAN
CONSTRUCTION NOTES**

- All landscaping shall comply with the City of Mishawaka Zoning Ordinance.
- Work shall be performed by a single firm specializing in landscape work with a minimum of five (5) years experience.
- All plant materials shall be nursery grown and meet the latest edition of the "American Standard for Nursery Stock". Tree caliper size indicates the diameter of the trunk taken at 6" above ground level.
- Contractor shall restore existing lawn and planting areas disturbed during construction to existing or better condition.
- Contractor is responsible for coordinating landscape work with other work.
- Contractor shall notify Developer, prior to planting, of any foreign substance that may damage vegetation.
- Contractor shall maintain moist soil for vegetation until planted. Check balled and burlapped plants to ensure they are receiving water through burlap material. If vegetation cannot be planted immediately, heel in root balls and cover with mulch.
- Landscape Contractor to prepare planting area soil. Test topsoil to verify fertility. Amend soil if pH is less than 5.5 or greater than 7.0. Adjust soil as indicated by analysis.
- Contractor shall verify that landscaped areas meet surveyed benchmarks and intended elevations for site drainage prior to finishing landscaping and placing topsoil; that building and trench backfilling is complete and inspected; and subgrade is contoured and compacted.
- Topsoil shall be 6" minimum depth in lawn areas. Planting soil shall be 18" minimum depth in planting areas and consist of 1/3 topsoil, 1/3 subsoil, and 1/3 peat moss and fertilizer. Topsoil shall be fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth; well drained, free of subsoil, clay or impurities, free from stones, roots, branches, or debris over 1/2" in size and free from herbicide or other toxins. Remove soils contaminated with petroleum products.
- Top of planted root ball shall be even with finished grade. Plants shall be plumb with a level subbase. Contractor shall provide a two (2) year straightening guarantee in lieu of staking trees.
- Landscape beds shall be defined by commercial grade 1/8" x 4" steel edging, manufactured by an established company. Stake per manufacturer's recommendation.
- Place 3" of shredded hardwood mulch at landscape beds. Place a 36" diameter 3" deep spaded natural "v" edged hardwood mulch ring at trees located outside of landscape beds.
- Hydroseed lawns. Restore areas disturbed during construction. Provide alternate price for sodding in lieu of hydroseeding.
- Irrigate planting and lawn areas per Owner's direction. Provide a permanent automatic irrigation system on a design build-basis to irrigate 100% of the landscape areas.
- All tree wrap/twine, stakes, and guys etc. to be removed in one (1) year as part of maintenance. Contractor shall provide a one (1) year guarantee for plant material from the date of installation. Warranty shall include replacement of dead or unhealthy vegetation to be planted in the next growing season, with a new one (1) year warranty commencing on date of replacement for each plant replaced.

SHEETS C8.0 - GENERAL DETAILS

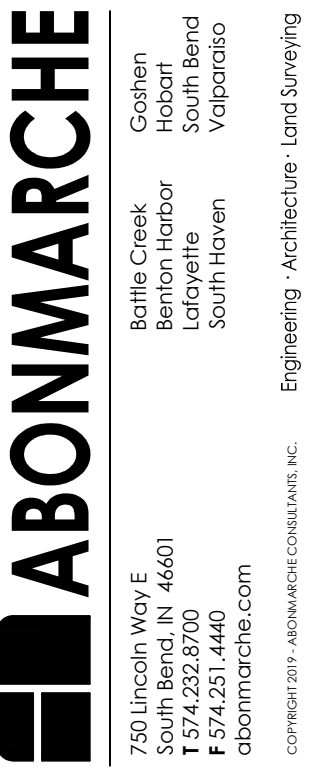
- GENERAL**
 - Curb and walk to be constructed of INDOT Class A concrete.
 - Cure concrete in accordance with current INDOT and municipal specifications.
 - Align curb, gutter and sidewalk joints.
- SIDEWALK**
 - Expansion joints shall be 1/2" wide with elastomeric filler, extending the full depth of the concrete located at a maximum spacing of 40'-0" and where sidewalk abuts concrete driveways, curb or other adjacent structures.
 - Contraction joints shall be scored 1/2" deep and spaced at 5 feet.
 - Formed joints shall be finished with a tool having a 1/4" radius.
 - Finish: Steel trowelled with a light broom texture perpendicular to the direction of travel.
- CURB**
 - Expansion joints shall be 1/2" wide with elastomeric filler, extending the full depth of the concrete, located at a maximum spacing of 40'-0".
 - Contraction joints shall be scored 1/2" deep and spaced at 10'.

SHEETS C8.2 - SEWER CONSTRUCTION NOTES

- All sewer main materials and construction shall be in accordance with City of Mishawaka Construction Standards and these Construction Drawings.
- Sanitary sewer fittings shall conform to the requirements of ASTM D3034 with a minimum wall thickness of SDR 35, as defined in 7.4.1, and molded in one piece with elastomeric joints and minimum socket depths as specified in Sections 6.2 and 7.3.2. PVC material shall have a cell classification of 12454-B and C as defined in ASTM D1784.
- Contractor shall supply as-built record drawings to the Owner and Engineer upon completion of work.
- The following tests shall be performed by the Contractor in accordance with the City of Mishawaka Standards and witnessed by a licensed Professional Engineer. The Engineer and Owner shall be provided 48 hours notice of all testing.
 - Low pressure air leakage test per ASTM F1417, standard test method for installation acceptance of plastic gravity sewer lines using low-pressure air. The infiltration rate shall not exceed 100 gallons per inch diameter of pipe per mile per day. If the test fails, the Contractor shall determine the cause, repair/replace the sewer line to the satisfaction of the Owner, and then re-test.
 - Tests for deflection of sanitary sewer pipes shall be performed no earlier than 30 days after installation. The pipe shall be tested with an approved 9-point mandrel. No pipe shall exceed a deflection of five (5%) percent. In the event the sanitary sewer pipe fails the deflection test, the section of pipe which failed shall be completely removed, replaced, and tested starting with low pressure air leakage testing and then deflection testing. The mandrel shall be pulled without the aid of a mechanical pulling device.
 - Sanitary sewer manholes, if specified, shall be tested by negative air pressure in accordance with ASTM C1244-93. If the test fails, the Contractor shall determine the cause, and then repair/replace the manhole to the satisfaction of the Owner. The test shall be repeated until it is successful.

SHEETS C8.1 - WATER CONSTRUCTION NOTES

- Water main, domestic and fire services, materials and construction shall be in accordance with City of Mishawaka Construction Standards, AWWA Standards, and these Construction Drawings.
- Water main (4-inch diameter and larger) shall be Class 50 ductile iron and pipe fittings shall be Class 250 ductile iron mechanical joint meeting the requirements of the City of Mishawaka and AWWA C-110 or AWWA C-111. Water main joints shall be bell and spigot with elastomeric rubber gaskets. Joints shall be push-on or mechanical, unless otherwise noted in the plans. Mechanical joint fittings shall be restrained by a mega-lug flange or grip ring meeting Mishawaka's latest specifications.
- Water services (less than 4-inch diameter) shall be Type 'K' Copper.
- All gate valves shall be resilient sealed and meet or exceed AWWA C509 (standard for resilient wedge seated valves) and the City of Mishawaka Standards. Valves shall be rated for 200 psi working water pressure with mechanical joints and open left (counterclockwise). Valves shall be anchored with restrained joints and thrust blocking. Valves shall be installed with standard cast iron valve boxes, plumb over the wrench nut of the valve and to finished grade, and have a round plug-type cover embossed with "WATER".
- Retainer glands shall be provided on all valves and fittings in accordance with City of Mishawaka Standards.
- Water main and services shall have a minimum cover of 5 feet.
- Water main shall be backfilled in accordance with the requirements as set forth in the plans for rigid pipe beneath pavement.
- Maintain a minimum horizontal clear separation 10 feet between water and sewer pipes. Where water and sewer pipes cross, maintain a minimum vertical clear separation of 18 inches. If separation cannot be met, the sewer pipe shall be constructed of water grade pipe meeting AWWA Standards for a distance of 10 feet each side of the water pipe. At crossings, one full length of water pipe shall be installed so that the joints will be as far from the sewer pipe as possible.
- All tees, plugs, valves, dead ends, reducers, and bends shall be installed with a restrained joint in accordance with City of Mishawaka Standards.
- Flushing, Disinfection, and Testing for domestic service shall be in accordance with City of Mishawaka and AWWA Standards. Water main shall be subjected to hydrostatic pressure 50% above normal operating pressure or 150 psi for at least 2 hours. Water Department to determine test pressure prior to performing testing. Leakage shall not exceed 36 gallons per 24 hours per mile of pipe per inch nominal diameter for pipes in 12' lengths, 27 gallons for 16' lengths, and 24 gallons for 18' lengths. All pipes or joints that do not surpass the requirements of the leakage testing shall be removed and replaced at the Contractor's expense.
- Flushing, Disinfection, and Testing for fire service shall be in accordance with City of Mishawaka Fire Department and AWWA Standards. Fire Department to determine test pressure and allowable leakage prior to performing testing.



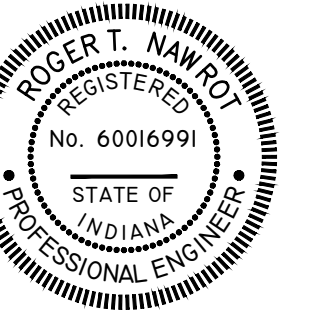
**TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA**

PROJECT:

**CONSTRUCTION NOTES
AND SPECIFICATIONS**

SHEET TITLE:

DRAWN BY: **DEF**
 DESIGNED BY: **DEF**
 PM REVIEW: **MJH**
 QA/QC REVIEW: **RTN**
 DATE: **3-25-2020**
 SEAL:



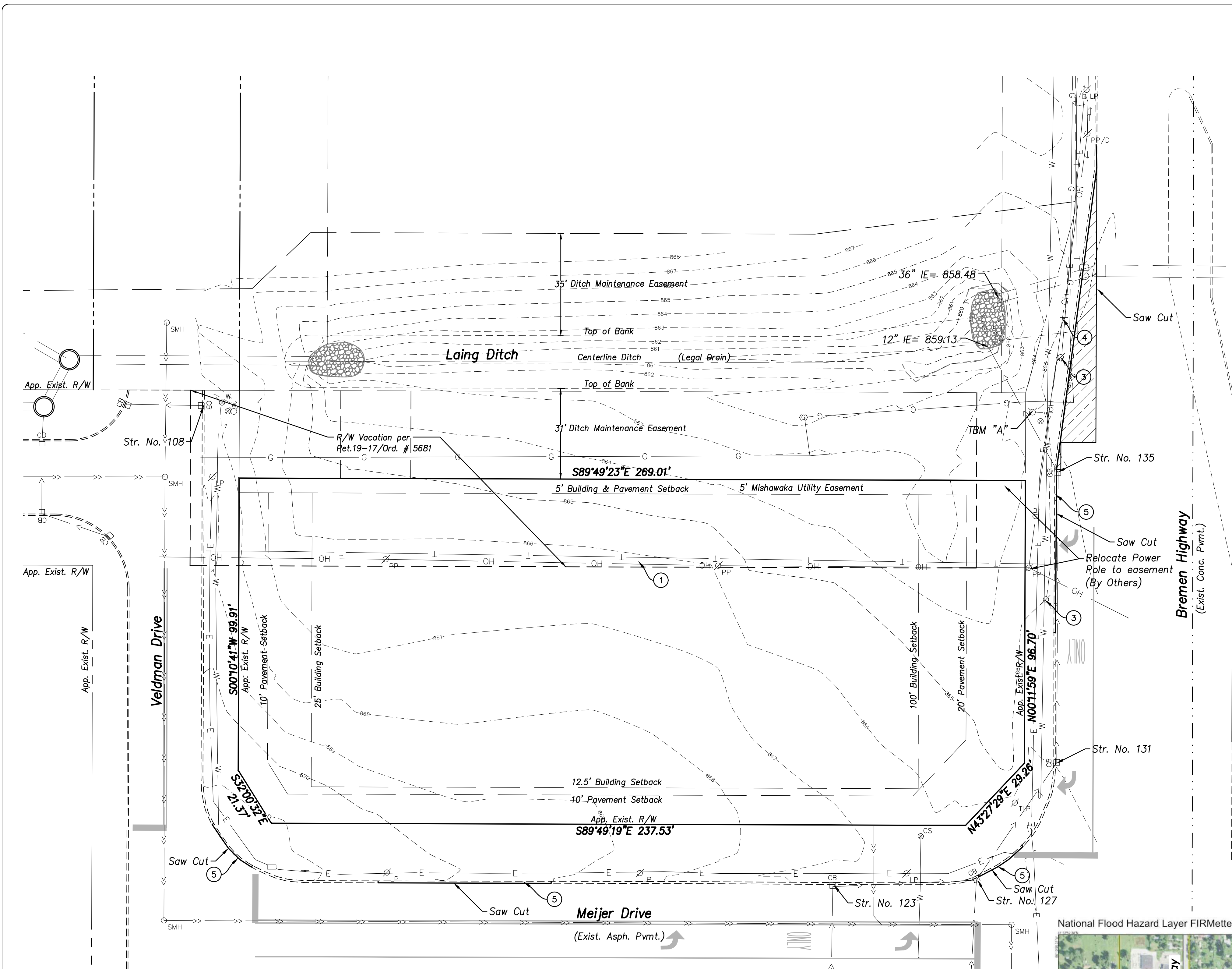
SIGNATURE: *[Signature]*
 DATE: **7-1-2020**

SCALE:
 HORZ:
 VERT:

ACI JOB # **20-0205**
 SHEET NO.

C1.0

2	UPDATE ADDRESS	DEF	8/10/20
RNUM	RDESC	RBY	RDATE



EXISTING STRUCTURE DATA

- STR. NO. 108**
Exist. CB
Rim= 868.12
12" W= 865.98
- STR. NO. 123**
Exist. CB
Rim= 766.11
12" S= 862.26
12" E= 862.25
- STR. NO. 127**
Exist. CB
Rim= 865.53
12" S= 861.90
12" W= 861.94
12" NE DI= 861.89
- STR. NO. 131**
Exist. CB
Rim= 865.32
12" SW DI= 861.49
12" N DI= 861.49
- STR. NO. 135**
Exist. CB
Rim= 864.45
12" S DI= 861.00
12" NW DI= 861.00

EXISTING FEATURES LEGEND

- CB Inlet/Catch Basin
- W Water Valve
- Fire Hydrant
- Light Pole
- Telephone Marker
- SMH Sanitary Manhole
- Storm Inlet
- Drywell
- G Gas Line
- OH Overhead Electric Line
- E Electric Line
- T Telephone Line
- Sanitary Sewer
- Storm Sewer
- W Water Main
- 740 Contour

REMOVALS LEGEND

- Remove Existing Concrete Pavement
- 1 Existing electric and telephone to be relocated to 5' Indiana Michigan Power Company Easement (North edge of site) (By Others)
- 2 Relocate Power Pole 2' Behind Curb (By Others)
- 3 Relocate Light Pole 2' Behind Curb (By Others)
- 4 Relocate Sign Behind Curb
- 5 Remove Existing Curb
- 6 Remove Existing Concrete Center Curb

NOTES

1. Contractor shall request existing utility location from Indiana 811 prior to commencing construction.
2. Contractor shall notify the City of Mishawaka Department of Engineering prior to commencing construction within R/W.
3. Contractor shall remove topsoil and stockpile the material onsite at a location approved by the Owner.
4. Removed items shall be disposed off-site in accordance with all applicable local, state and federal codes.

SURVEY NOTES

1. Topographic survey data collection was performed in February, 2020.
2. The horizontal and vertical control datum for this survey is based on state plane coordinate system.

REFERENCES

1. ALTA Survey, Project No. 19-1474, Sheet 1 of 1, dated 11-5-19 by Michael Rozycki, PLS of Abonmarche Consultants, Inc.
2. Building footprint by Arcvision, Inc. St. Louis, MO.

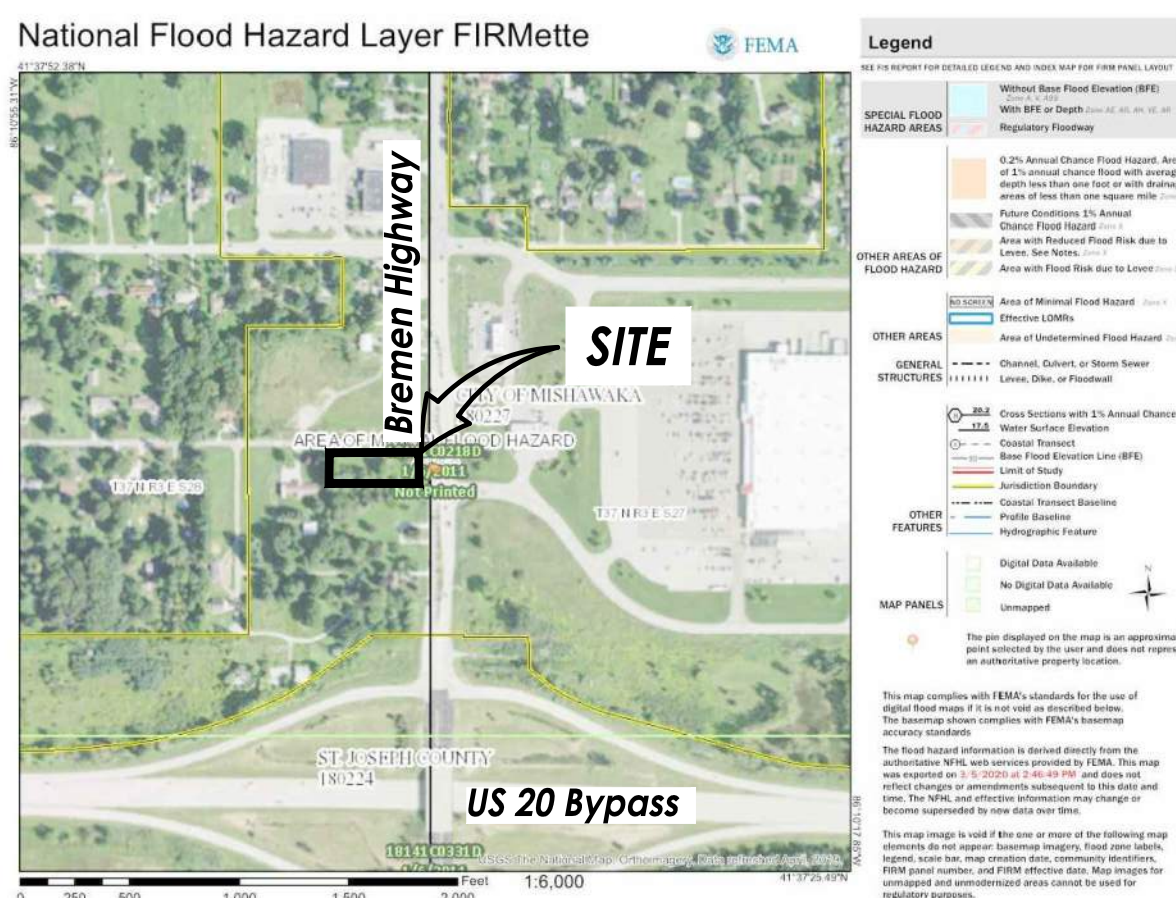
CONTROL POINT DATA HORIZONTAL DATUM

CONTROL POINT #10	SET REBAR WITH RED CAP "ABONMARCHÉ CONTROL POINT" LOCATED AT NE COR. OF BREMEN HWY & MEIJER DR., APPROX. 9' EAST OF TRAF. MH	2324016.7148	188691.1978	866.08
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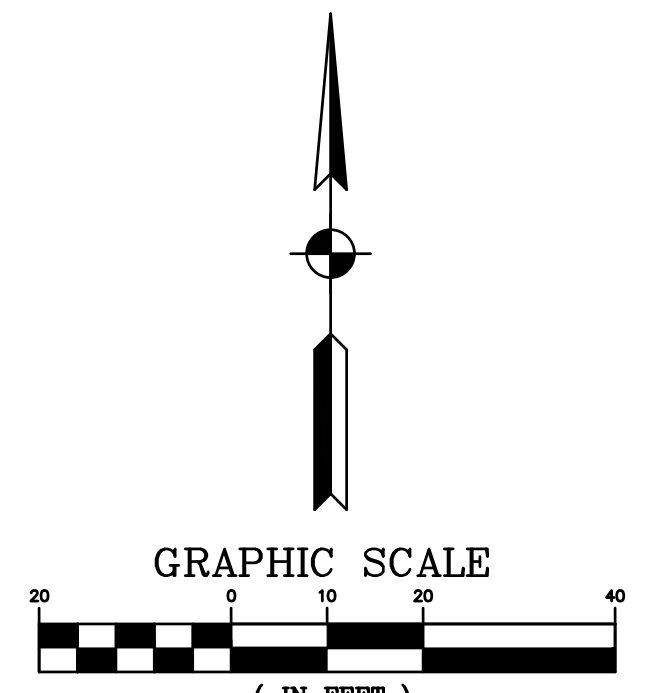
BENCHMARK DATA VERTICAL DATUM

TBM A	CHISELED "X" IN NE BOLT OF FIRE HYDRANT APPROX. 23' N OF NE COR. OF SITE	865.48
TBM B	CHISELED "X" IN NE BOLT OF FIRE HYDRANT LOCATED AT THE SE COR. OF BREMEN HWY & MEIJER DRIVE	866.53

FIRM Source
St. Joseph County, Indiana
and Incorporated Areas
Map Number 18141C0218D
Effective Date January 2, 2011



FEMA FLOOD INSURANCE RATE MAP (FIRM)
Scale: 1" = 500'



2	UPDATE ADDRESS	DEF	8/10/20
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ABONMARCHÉ
750 Lincoln Way E
South Bend, IN 46601
P 574.251.4400
F 574.251.4440
abonmarche.com

TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA

EXISTING CONDITIONS & REMOVAL PLAN

SHEET TITLE: EXISTING CONDITIONS & REMOVAL PLAN

DATE: 3-25-2020

SEAL: REGISTERED PROFESSIONAL ENGINEER No. 60016991 STATE OF INDIANA

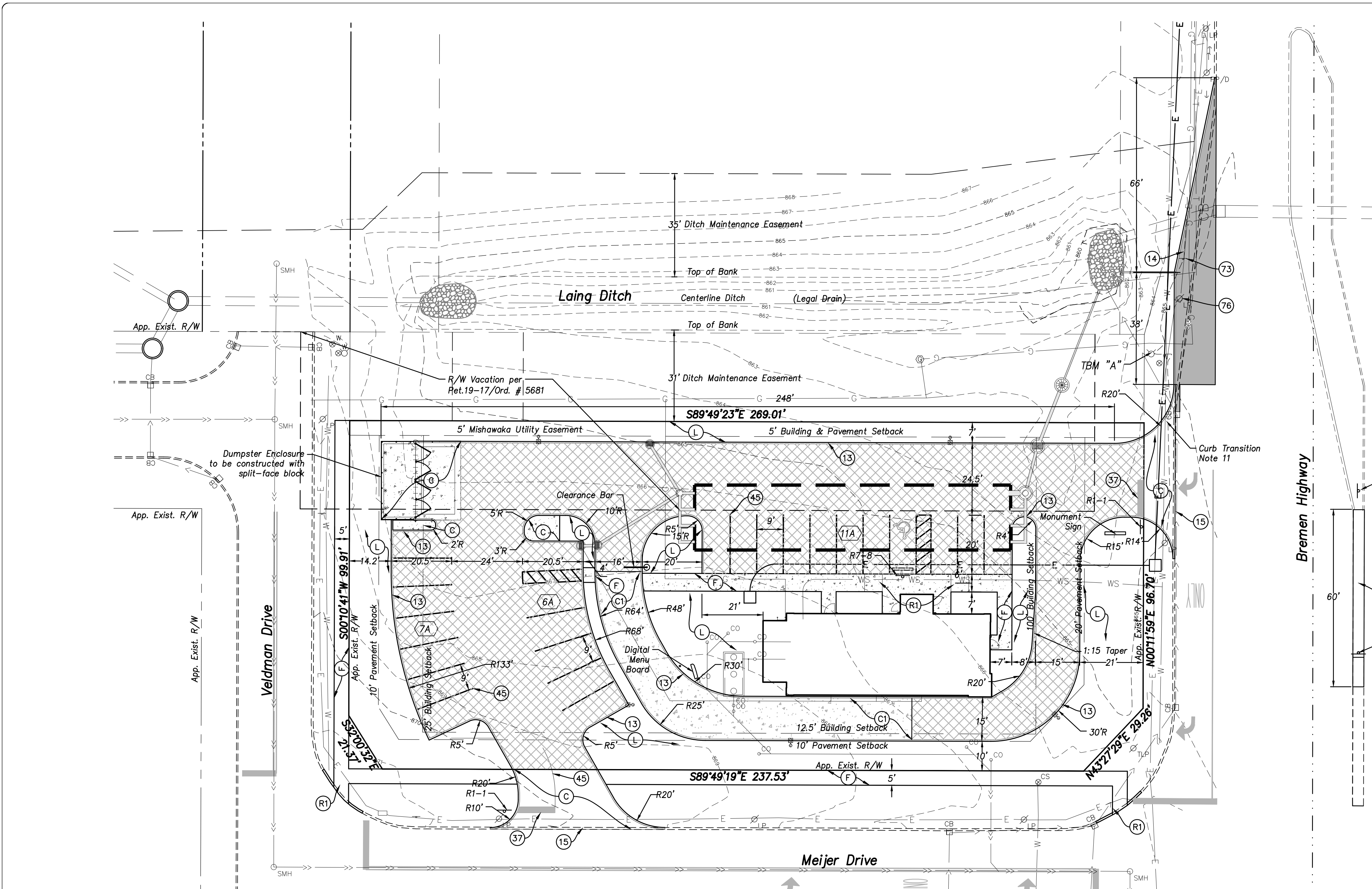
SIGNATURE: [Signature]

DATE: 7-1-2020

SCALE: HORIZ: 1" = 20' VERT: [Blank]

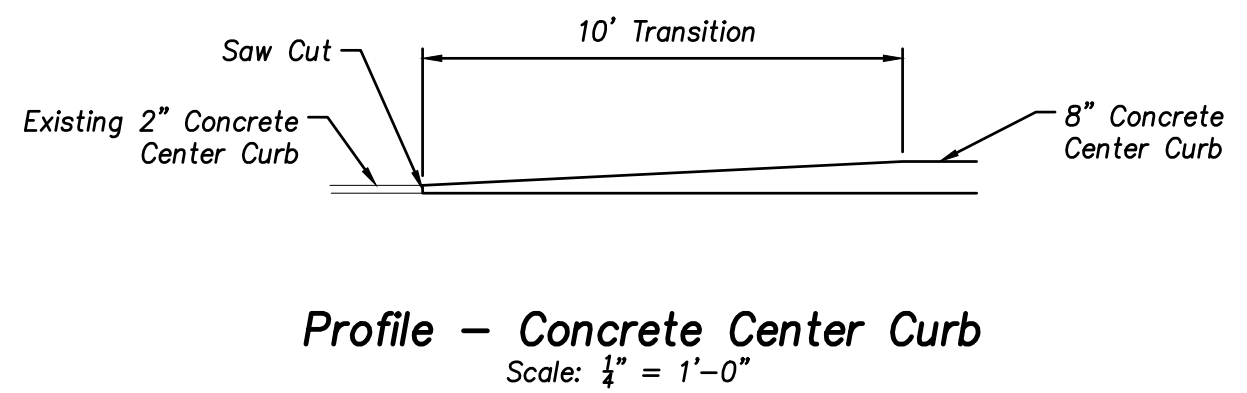
ACI JOB #: 20-0205

SHEET NO.: C2.0



PROPOSED FEATURES LEGEND

- Standard HMA Pavement:
 - 1-1/2" HMA Surface (165 #/SY)
 - 2-1/2" HMA Intermediate (275 #/SY)
 - 8" Compacted #53 Aggregate Base
- PCCP, 10" on Subbase for PCCP
- 8" Concrete Pavement on 4" compacted #53 aggregate base
- 6" 4,000 PSI Concrete with WWF on 6" compacted #53 aggregate base
- 4" Concrete Sidewalk
- Landscape Area; See Sheet C7.0
- Sidewalk Ramp, Type 1
- Concrete Curb
- Integral Concrete Curb, 8"
- Combination Concrete Curb & Gutter, Depressed Curb
- Concrete Center Curb, Type "C"
- 24" White Paint Stop Line
- 4" Solid White Paint Line
- Relocate Sign
- Relocate Light Pole
- Quantity of 9'x20' Auto Parking Spaces/Bay
- Int'l. Symbol of Access
- R1-1 MUTCD R-1 "STOP" Sign & Post
- R7-8 (ADA Access) Sign & Post
- Drainage Structure
- Clean out
- Light Pole



LEGAL DESCRIPTION:

A PARCEL LOCATED IN THE SOUTHEAST QUARTER OF SECTION 28, TOWNSHIP 37 NORTH, RANGE 3 EAST, CITY OF MISHAWAKA, PENN TOWNSHIP, ST. JOSEPH COUNTY, INDIANA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 00°19'19" EAST, 656.34 FEET TO A POINT ON THE CENTERLINE OF ELMWOOD AVENUE; THENCE SOUTH 89°49'23" WEST ALONG SAID CENTERLINE AND THE NORTH LINE OF A TRACT OF LAND CONVEYED TO CITY OF MISHAWAKA FOR RIGHT OF WAY DEDICATION AS DESCRIBED IN INSTRUMENT NUMBER 2019-18674, DEDICATION #1, ST. JOSEPH COUNTY RECORDER, A DISTANCE OF 57.31 FEET TO THE NORTHWEST CORNER OF SAID DEDICATION #1 AND BEING THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 89°49'23" WEST ALONG SAID CENTERLINE 269.01 FEET TO THE NORTHEAST CORNER OF A TRACT OF LAND CONVEYED TO CITY OF MISHAWAKA FOR RIGHT OF WAY DEDICATION AS DESCRIBED IN INSTRUMENT NUMBER 2019-18674, DEDICATION #2, ST. JOSEPH COUNTY RECORDER; THENCE SOUTH 00°10'41" WEST, ALONG THE EAST LINE OF SAID DEDICATION #2 A DISTANCE OF 99.91 FEET; THENCE SOUTH 32°00'32" EAST ALONG AN EASTERLY LINE OF SAID DEDICATION #2 A DISTANCE OF 21.37 FEET; THENCE SOUTH 89°49'19" EAST ALONG THE NORTH LINE OF SAID DEDICATION #2 AND THE NORTH LINE OF A TRACT OF LAND CONVEYED TO CITY OF MISHAWAKA FOR RIGHT OF WAY DEDICATION AS DESCRIBED IN INSTRUMENT NUMBER 2019-18673, ST JOSEPH COUNTY RECORDER, A DISTANCE OF 237.53 FEET; THENCE NORTH 43°27'29" EAST ALONG THE WESTERLY LINE OF SAID CITY OF MISHAWAKA LAND AND THE WESTERLY LINE OF SAID DEDICATION #1 A DISTANCE OF 29.26 FEET; THENCE NORTH 00°11'59" EAST ALONG THE WEST LINE OF SAID DEDICATION #1 A DISTANCE OF 96.70 FEET TO THE POINT OF BEGINNING; CONTAINING 31,424 SQUARE FEET, MORE OR LESS, AND SUBJECT TO EASEMENTS, COVENANTS, AND RIGHTS OF WAY OF RECORD.

TABULATED DATA

PROPOSED BUILDING	
Restaurant with Drive Thru	2,053 SF
TOTAL	2,053 SF

PROPOSED LOT COVERAGE		
Area (SF)	% Coverage	
Building Footprint	2,053	6.5%
Pavement & Sidewalk	18,242	58.1%
Open/Landscape Area	11,121	35.4%
TOTAL	31,416	100.0%

(0.72 Ac)

PARKING SUMMARY

AUTOMOBILE PARKING SPACES REQUIRED

- Restaurant with Drive Thru: 15 Space/1,000 GSF
- = (15 Space) x (2,053 SF)/1,000 = 30 Spaces

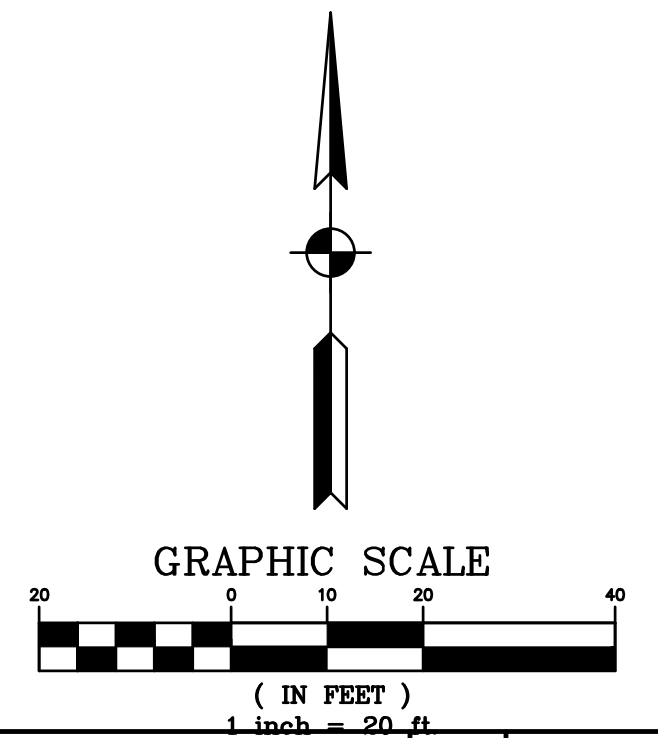
Total 30 Automobile Spaces Required

TOTAL PARKING SPACES PROVIDED

- Automobile: 24 Spaces (Incl. 1 ADA Accessible)
- See Note 5

GENERAL NOTES

- Current Zoning: City of Mishawaka S2 PUD.
- Existing Land Use: Vacant / Proposed Land Use: Restaurant with Drive Thru.
- Building and parking setbacks in accordance with the S-2 PUD conditions and development regulations (Ord. 5057) and/or the C-7 Auto-Oriented Restaurant Commercial District, when applicable.
- The building will be serviced by City of Mishawaka municipal water and sewer.
- Variance to reduce required parking to 24 spaces was approved by the City of Mishawaka BZA Appeal 20-02 on February 11, 2020.
- Landscape, lighting & signage will be in accordance with the zoning ordinance unless the proper variances are obtained.
- Storm water will be collected on-site by the Owner.
- See Sheet C1.0 for Site Plan Construction Notes. See Sheet C8.0-C8.2 for Construction Details.
- See Architectural Drawings for building layout, foundations, wiring, etc.
- The approach and deceleration lane have been designed in accordance with the Mishawaka Engineering Standards for a commercial drive approach Type 1A with a posted speed limit of 40 mph on Bremen Highway.
- The 6" concrete curb shall transition to the 8" Integral Concrete Curb through the approach.
- Proposed Building will be one-story in height.



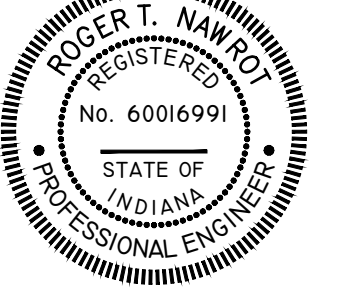
NO.	REVISION	DATE	BY
1	REVISE PAVEMENT MATERIAL IN DRIVE THRU	7/24/20	DEF
		8/10/20	DEF

ABONMARCHÉ
 17 N. Washington Street
 Valparaiso, IN 46383
 Phone: 219.850.4625
 Fax: 219.850.4625
 abonmarche.com
 abonmarche.com

TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA

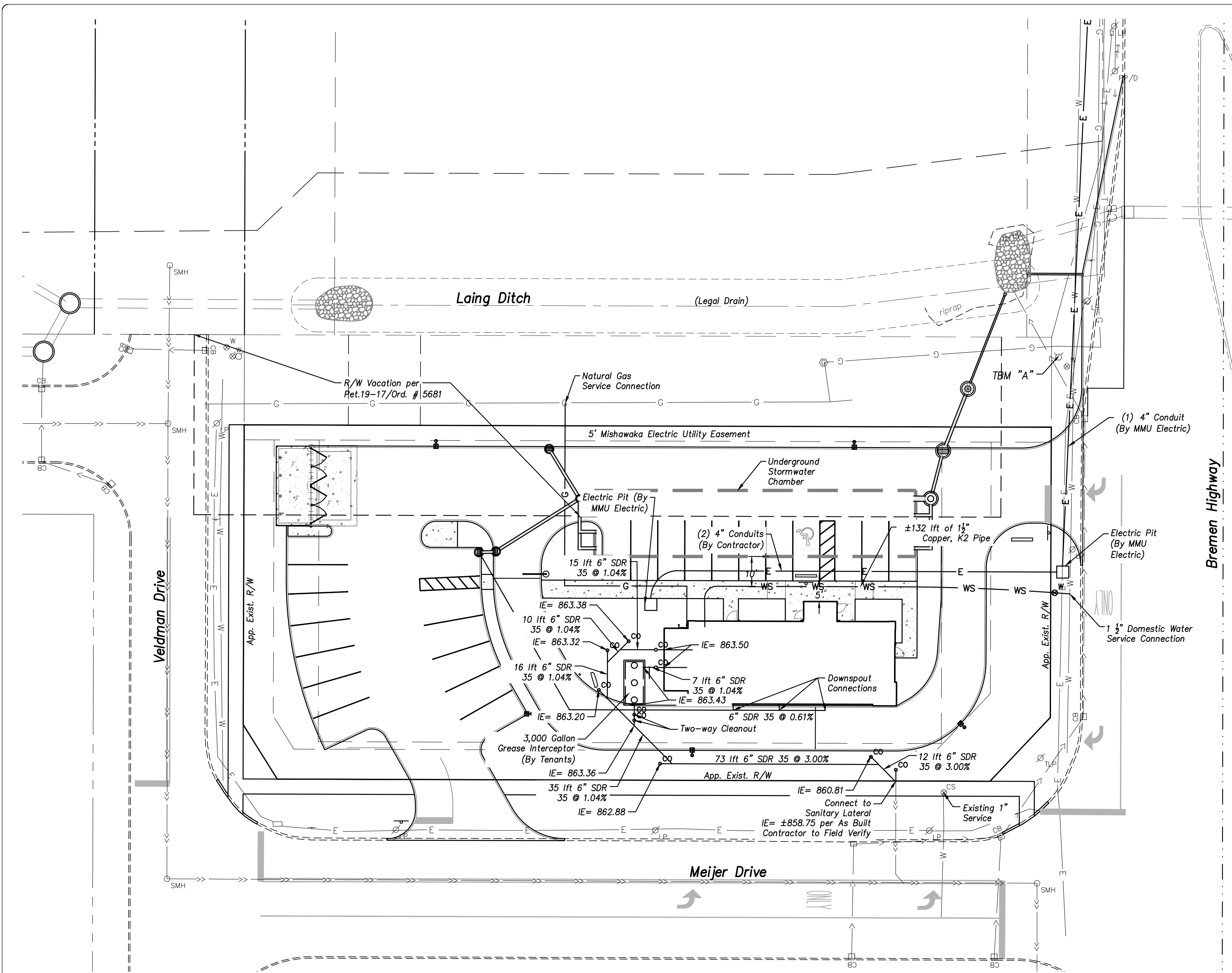
SITE PLAN

SHEET TITLE:
 DRAWN BY: DEF
 DESIGNED BY: DEF
 PM REVIEW: MJH
 QA/QC REVIEW: RTN
 DATE: 3-25-2020



SIGNATURE: [Signature]
 DATE: 7-1-2020
 SCALE: HORZ: 1" = 20'
 VERT: 1" = 20'

PROJECT NO: 20-0205
 SHEET NO: C3.0



EXISTING FEATURES LEGEND

- CB Inlet/Catch Basin
- W Water Valve
- FH Fire Hydrant
- LP Light Pole
- TM Telephone Marker
- SMH Sanitary Manhole
- SI Storm Inlet
- DR Drywell
- G Gas Line
- OH Overhead Electric Line
- E Electric Line
- T Telephone Line
- SS Sanitary Sewer
- StS Storm Sewer
- WM Water Main

PROPOSED FEATURES LEGEND

- DS Drainage/Sewer Structure
- CO Clean-out
- W Water Valve
- SS Storm Sewer
- 6" SDR 35 PVC Sanitary Sewer Service
- WS Water Service
- G Gas Service
- E Electric Service
- T Telephone Service
- C Cable TV Service
- FOC Fiber Optics Service
- LP Light Pole

GENERAL NOTES

1. See Drainage Plan, Sheet C6.0, for structure notes with pipe lengths and invert elevations.
2. See Sheet C1.0 for Utilities Plan Construction Notes.
3. See Erosion Control, Sheets C9.0- C9.1.
4. A qualified soil testing firm approved by the Owner shall perform compaction testing.
5. XFMR doors for the electric cabinet to open to the north.

Grease Trap Sizing

Grease Trap Sizing conforms to the requirements set forth by the City of Mishawaka.

Assumptions:

- Building will be a Fast Casual Restaurant (Peak Factor = 1.33)
- Building will have a commercial kitchen with dishwashing machines (Waste Flow Rate Factor = 6)
- Building will have commercial kitchen waste (Retention Time = 2.4)
- Building will have a 24-hour operation (Storage Factor = 3)

Approximate Restaurant Seating = 35 seats

Required = (35 seats x 1.33) x 6 x 2.4 x 3 = 2,011 gallons

Provided = 3,000 gallons

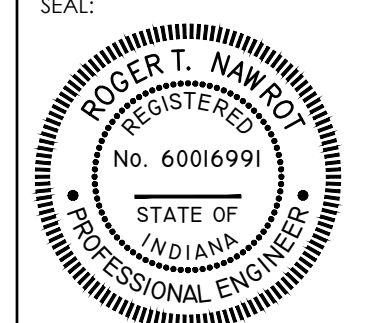
ABONMARCHÉ
 750 Lincoln Way E
 South Haven, IN 46601
 Phone: 574.231.4400
 Fax: 574.231.4440
 abonmarche.com

**TACO BELL
 3615 BREMEN HIGHWAY
 MISHAWAKA, INDIANA**

UTILITIES PLAN

SHEET TITLE:

DRAWN BY: DEF
 DESIGNED BY: DEF
 PM REVIEW: MJH
 QA/QC REVIEW: RTN
 DATE: 3-25-2020

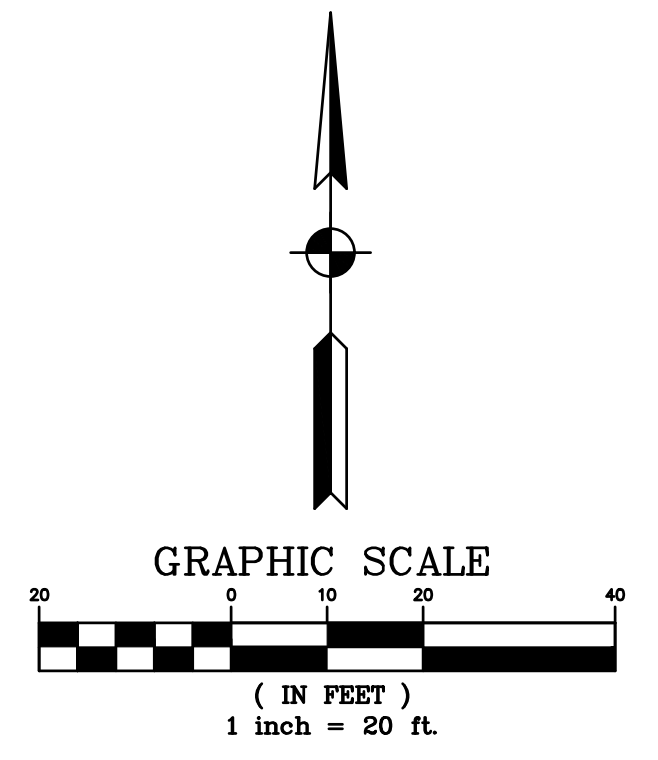


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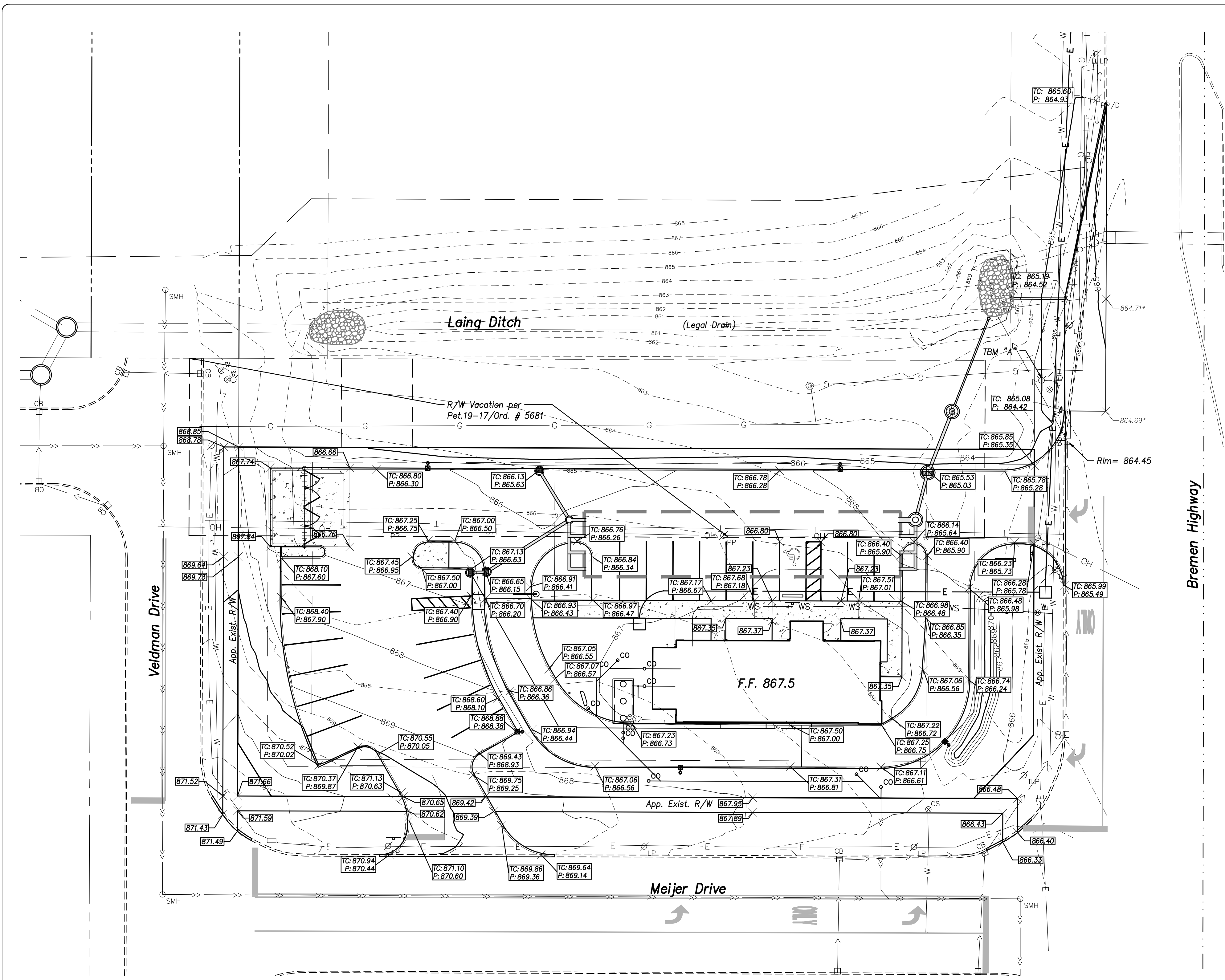
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 HORZ: 1" = 20'
 VERT: 1" = 20'

ACT JOB #
20-0205

SHEET NO.
C4.0



2	UPDATE ADDRESS	DEF	8/10/20
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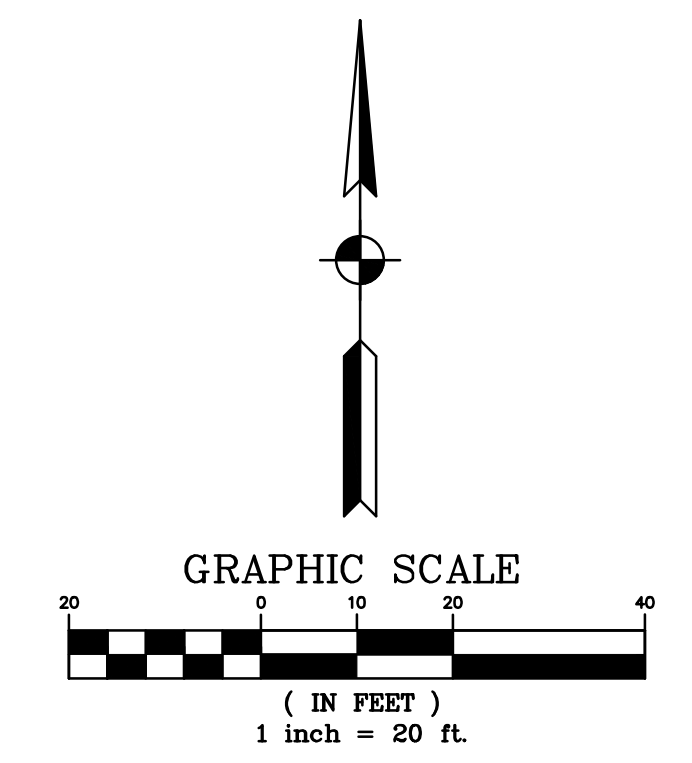


EXISTING FEATURES LEGEND

- CB Inlet/Catch Basin
- W Water Valve
- F Fire Hydrant
- L Light Pole
- T Telephone Marker
- SMH Sanitary Manhole
- 740--- Contour

PROPOSED FEATURES LEGEND

- DS Drainage Structure
- TC: 745.00 Top of Curb Elevation
- P: 744.50 Finished Pavement Elevation
- XXX.XX Finished Pavement Elevation
- XXX.XX* Existing Elevation (Match)
- 748--- Contour
- T 9' Wide Flush Curb for Mower Access to Lawn; Taper Curb @ Each End

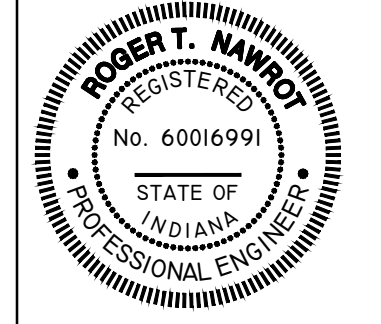


ABONMARCHÉ
 17 N. Washington Street
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 Engineering - Architecture - Land Surveying

TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA 46544

GRADING PLAN

SHEET TITLE:
 DRAWN BY: DEF
 DESIGNED BY: DEF
 PM REVIEW: MJH
 QA/QC REVIEW: RTN
 DATE: 3-25-2020

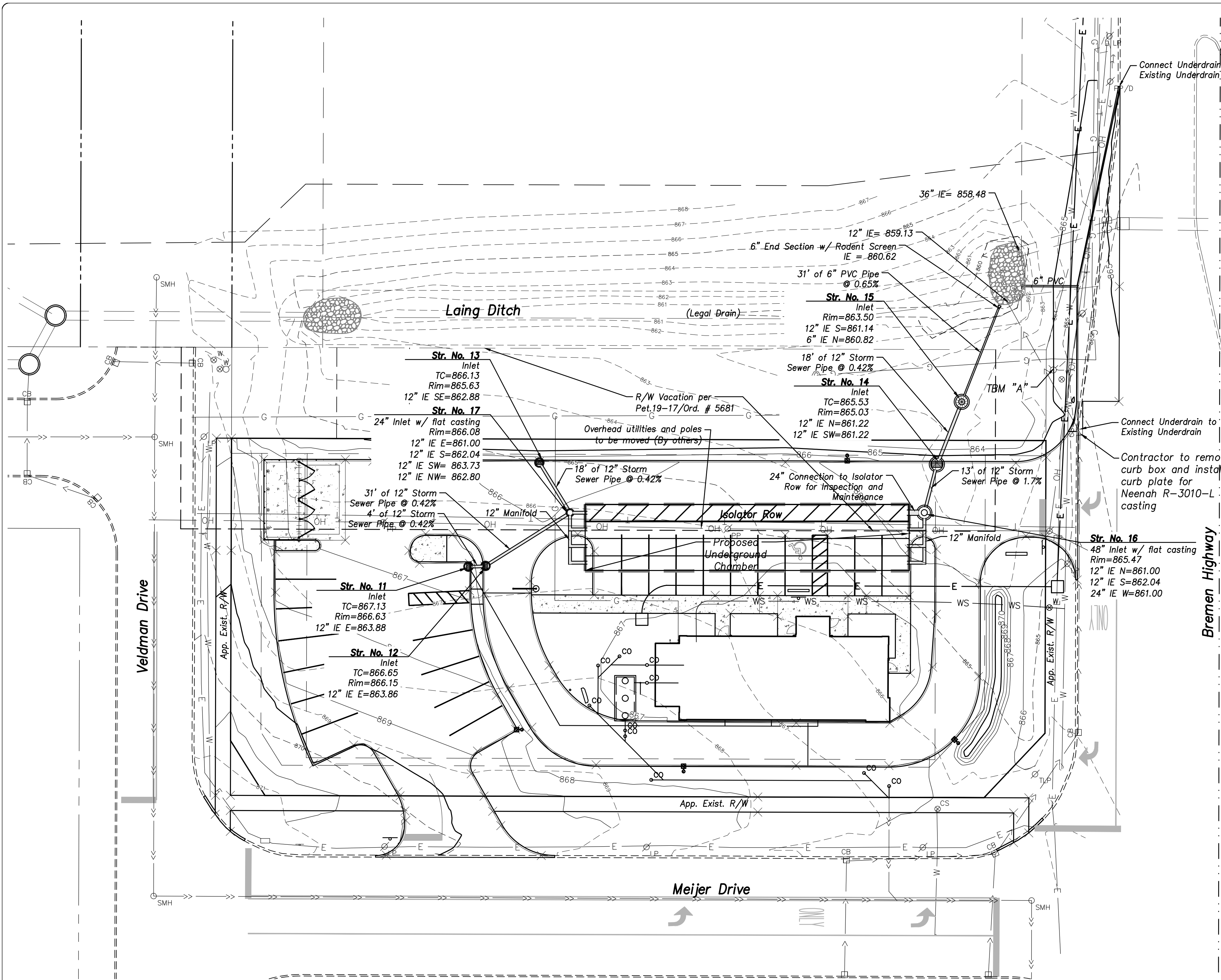


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SCALE:
 HORIZ: 1" = 20'
 VERT:
 ACT JOB #
20-0205

SHEET NO.
C5.0

2	UPDATE ADDRESS	DEF	8/10/20
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Taco Bell

Design Return Period 100 years
 Watershed Area 0.72 acres
 Developed Runoff Coefficient 0.72

Release Rate: Total Release Rate 0.45 cfs

Storm Duration (hrs)	100-Year Intensity (in/hr)	Inflow Rate (cfs)	Release Rate (cfs)	Storage Rate (cfs)	Required Storage (acre-feet)	Storage w/ Silt. Factor (1.06)	Required Storage (cft)
0.08	9.84	5.10	0.45	4.65	0.03	0.03	1,432
0.17	7.38	3.83	0.45	3.38	0.05	0.05	2,208
0.25	6.12	3.17	0.45	2.72	0.06	0.06	2,619
0.33	5.58	2.89	0.45	2.44	0.07	0.07	3,102
0.5	4.42	2.29	0.45	1.84	0.08	0.08	3,543
0.67	3.92	2.03	0.45	1.58	0.09	0.09	4,079
0.83	3.46	1.79	0.45	1.34	0.09	0.10	4,291
1	2.96	1.53	0.45	1.08	0.09	0.10	4,173
1.5	2.42	1.25	0.45	0.80	0.10	0.11	4,643
2	1.87	0.97	0.45	0.52	0.09	0.09	3,997
3	1.35	0.70	0.45	0.25	0.06	0.07	2,884
6	0.81	0.42	0.45				
9	0.72	0.37	0.45				
12	0.63	0.33	0.45				
24	0.26	0.13	0.45				

Available Storage

Required Storage 0.11 4,643 cft

Proposed Underground Chamber
 Total Volume 4,648 cft

Time for Required Storage to Infiltrate Soil
 2.87 hrs

Total Available Storage 4,648 cft 0.11 acre-ft

Drainage Calculations
 Drainage Design conforms to the requirements set forth by the St. Joseph County Storm Drainage System is designed to retain all post development storm water on the developed site for a 100 year, 24 hour storm event plus 6% for siltation.

Site Coverage
 Impervious Surfaces (C=0.90) = 0.47 acres
 Open Area (C=0.20) = 0.25 acres
 Total = 0.72 acres

Modified Runoff Coefficient - Developed Area
 $(0.47 \text{ acres} \times 0.90) + (0.25 \text{ acres} \times 0.20) = 0.72 \text{ acres}$

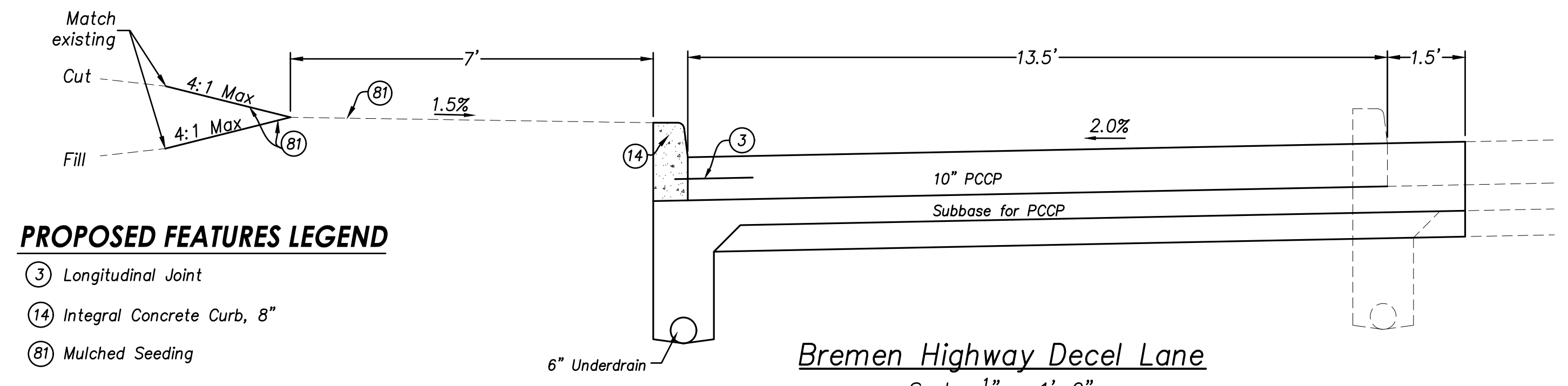
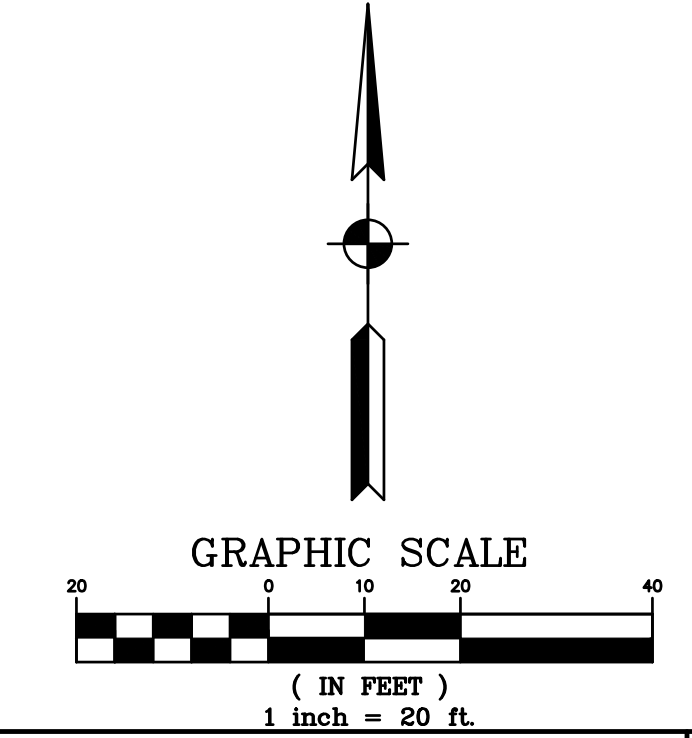
Detention Sizing
 100 Year, 24 Hour Storm Intensity
 Intensity Reference: National Oceanic and Atmospheric Administration (NOAA)
 Developed Catchment Area, Total (C=0.73) = 0.72 acres

From Detention Analysis (Above),
 Storage Required = 4,643 cft < 4,648 cft = Storage Provided

Allowable Release Rate
 Pre-development area = 0.72 acres
 $i = 10 \text{ year } 27 \text{ min.} = 3.13/\text{hour}$
 $Q = CIA$
 $Q = (0.2)(3.13)(0.72)$
 $Q = 0.45 \text{ cfs}$

Groundwater Elevation
 Soil borings completed by GME Testing May 29, 2020.
 Existing groundwater elevation measured at 845±.

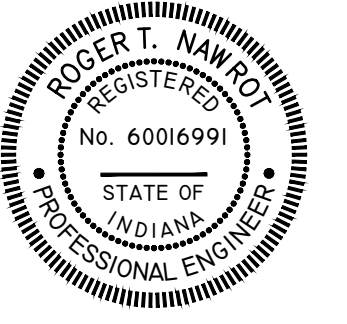
Note
 1. The St. Joseph County Drainage Board approved discharge into the Laing Ditch at its July 6, 2020 meeting.
 2. Storm sewer pipe is ADS N-12 or approved equal.
 3. Flat casting is Neenah R-1642 or approved equal.



- PROPOSED FEATURES LEGEND**
- ③ Longitudinal Joint
 - ⑭ Integral Concrete Curb, 8"
 - ⑧1 Mulched Seeding

Bremen Highway Decel Lane
 Scale: 1/2" = 1'-0"
 Per Elmwood Avenue Realignment Plans by Abonmarche Consultants, Inc. March 14, 2019.

SHEET TITLE:
 DRAWN BY: DEF
 DESIGNED BY: DEF
 PM REVIEW: MJH
 QA/QC REVIEW: RTN
 DATE: 3-25-2020



SIGNATURE:
 DATE: 7-1-2020

SCALE:
 HORZ: 1" = 20'
 VERT:
 ACT JOB # 20-0205

NO.	DESCRIPTION	DATE
2	UPDATE ADDRESS	8/10/20
1	MODIFICATION TO UG CHAMBER & STORM SEWER	7/16/20



Bremen Highway Taco Bell Mishawaka, IN

STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740, SC-310, OR APPROVED EQUIVAL.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPIDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE ASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE ASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY ASHTO FOR THERMOPLASTIC PIPE.
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE ASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CRISP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE ASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "LEASTFORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

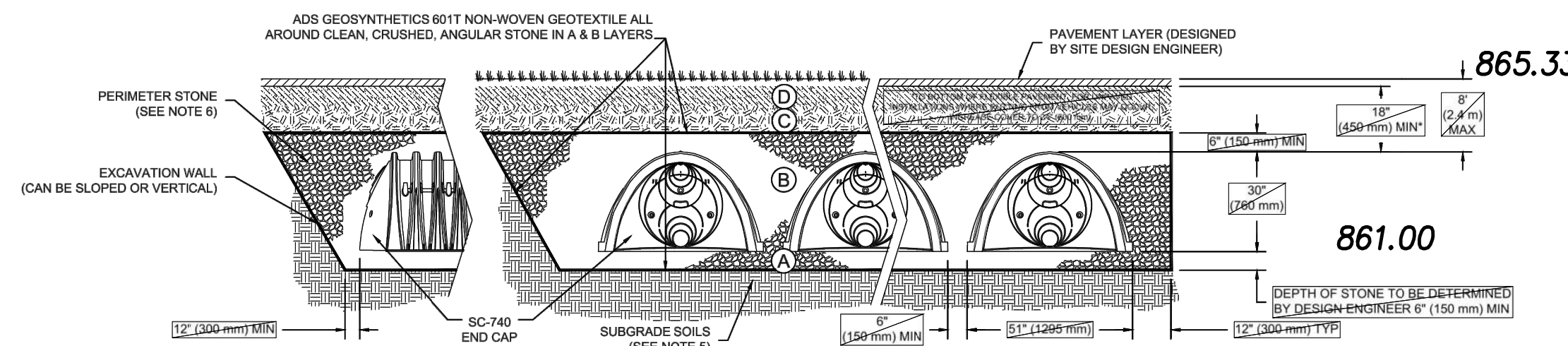
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
- CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE 'B' LAYER TO 12" (300 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145* A-1, A-2.4, A-3 OR AASHTO M43* 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. **

- 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 M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



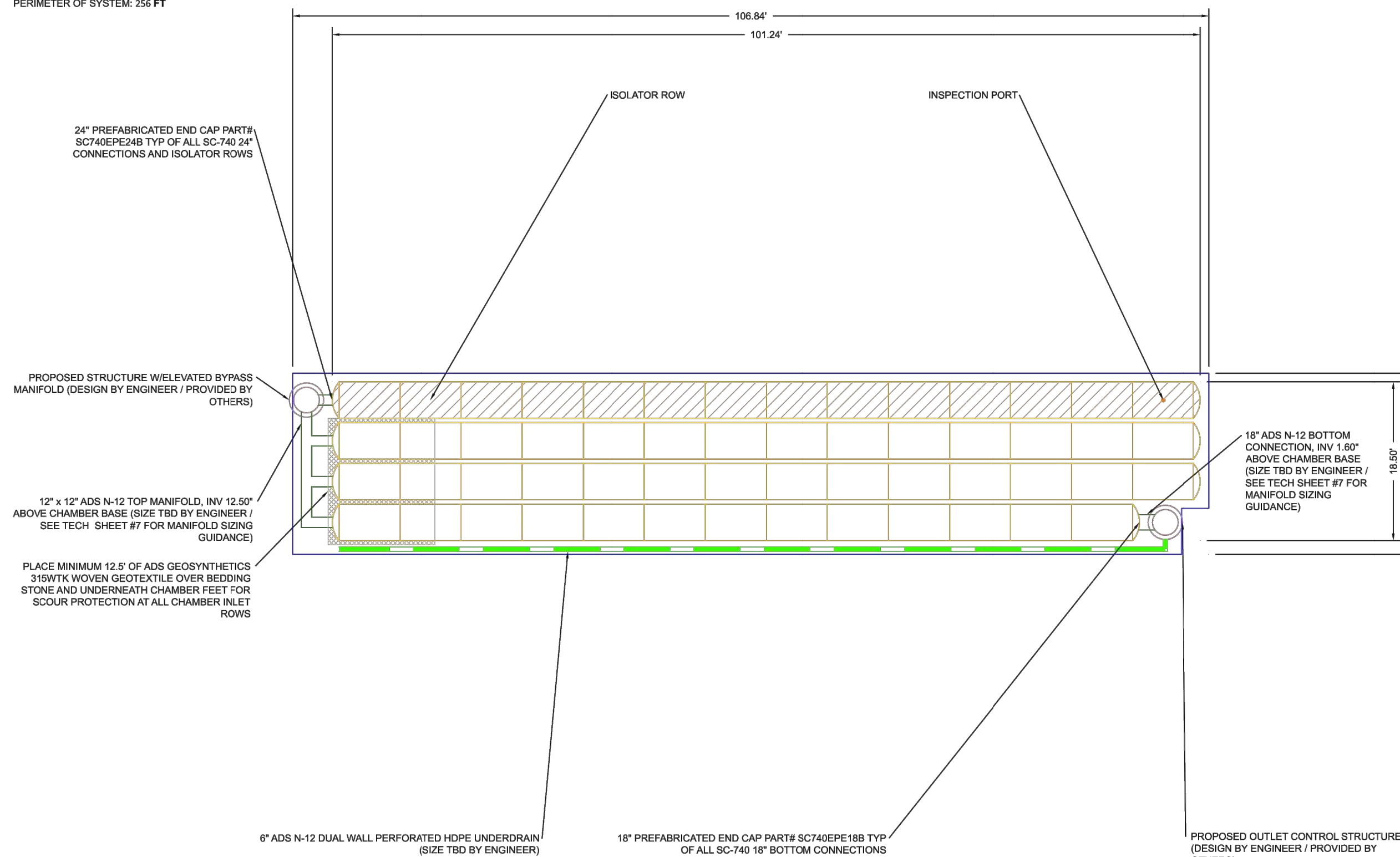
NOTES:

- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOLMATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

CONCEPTUAL LAYOUT

(5) STORMTECH SC-740 CHAMBERS
(8) STORMTECH SC-740 END CAPS
INSTALLED WITH 6" COVER STONE, 8" BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 4645 CF
AREA OF SYSTEM: 2337 FT²
PERIMETER OF SYSTEM: 256 FT

COMPUTER GENERATED CONCEPTUAL LAYOUT - NOT FOR CONSTRUCTION



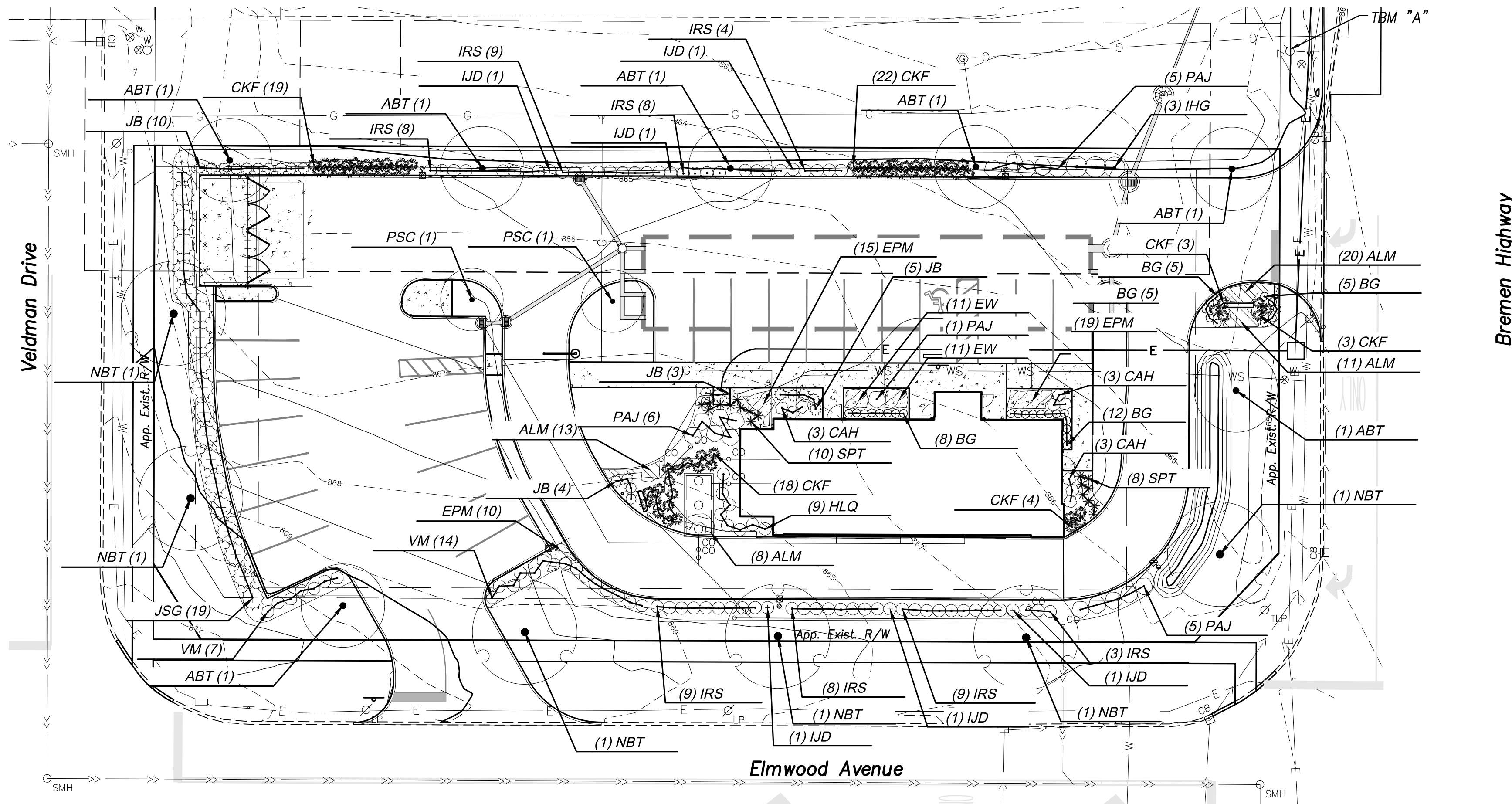
Bremen Highway Taco Bell
Mishawaka, IN
DATE: 03/04/2020 DRAWN: DF CHECKED: ---
PROJECT #: 2017
StormTech
4640 TREHMAN BLVD
HILLIARD, OH 43026
1-800-733-7473
NOT TO SCALE
SHEET 2 OF 5

Bremen Highway Taco Bell
Mishawaka, IN
DATE: 03/04/2020 DRAWN: DF CHECKED: ---
PROJECT #: 2017
StormTech
4640 TREHMAN BLVD
HILLIARD, OH 43026
1-800-733-7473
SHEET 4 OF 5

PROJECT: TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA
SHEET TITLE: CHAMBER DETAILS
SHEET NO: 4 OF 5
DRAWN BY: DEF
DESIGNED BY: DEF
PM REVIEW: MJH
QA/QC REVIEW: RTN
DATE: 3-25-2020
SEAL: REGISTERED PROFESSIONAL ENGINEER
No. 60016991
STATE OF INDIANA
SIGNATURE: [Signature]
DATE: 7-1-2020
SCALE: HORIZ: AS SHOWN
VERT: HORIZ
ACI JOB #: 20-0205
SHEET NO: C6.1

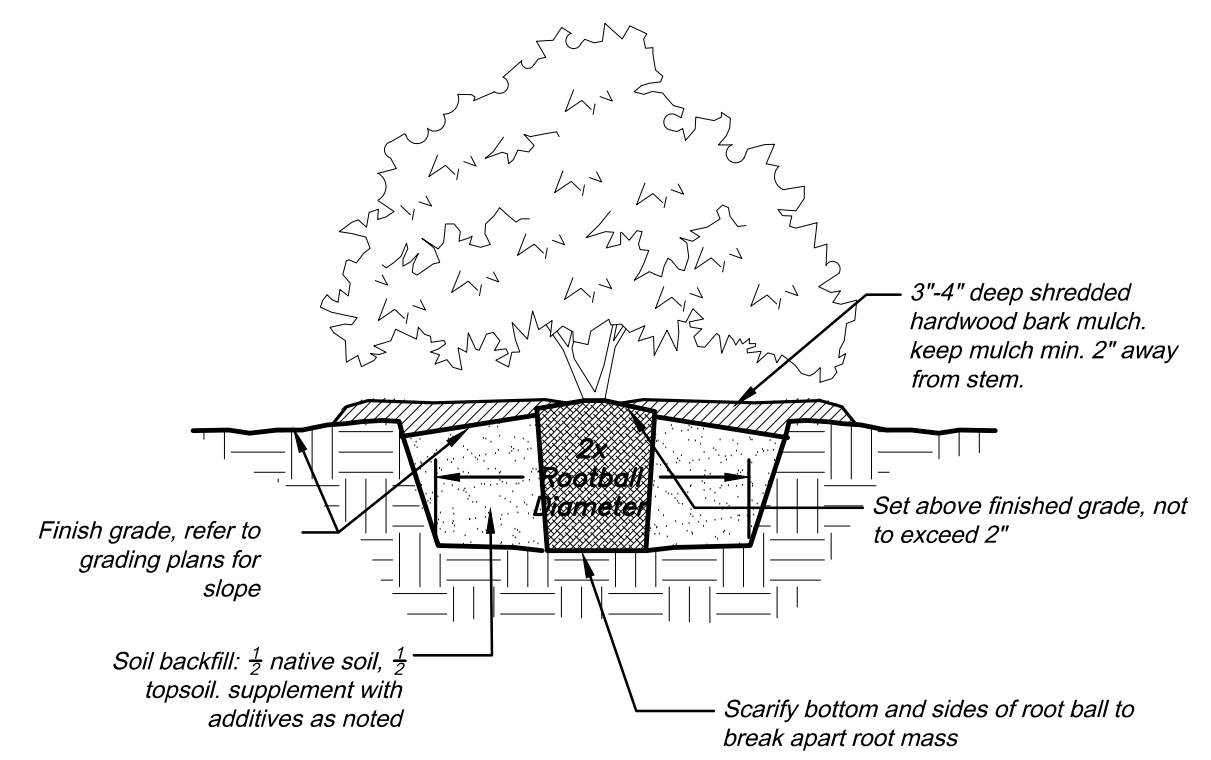
ABONMARCHÉ
17 N. Washington Street
Cobden, Illinois 62424
1-815-298-4683
1-815-298-4625
abonmarche.com
Engineering - Architecture - Land Surveying

2	UPDATE ADDRESS	DEF	8/10/20
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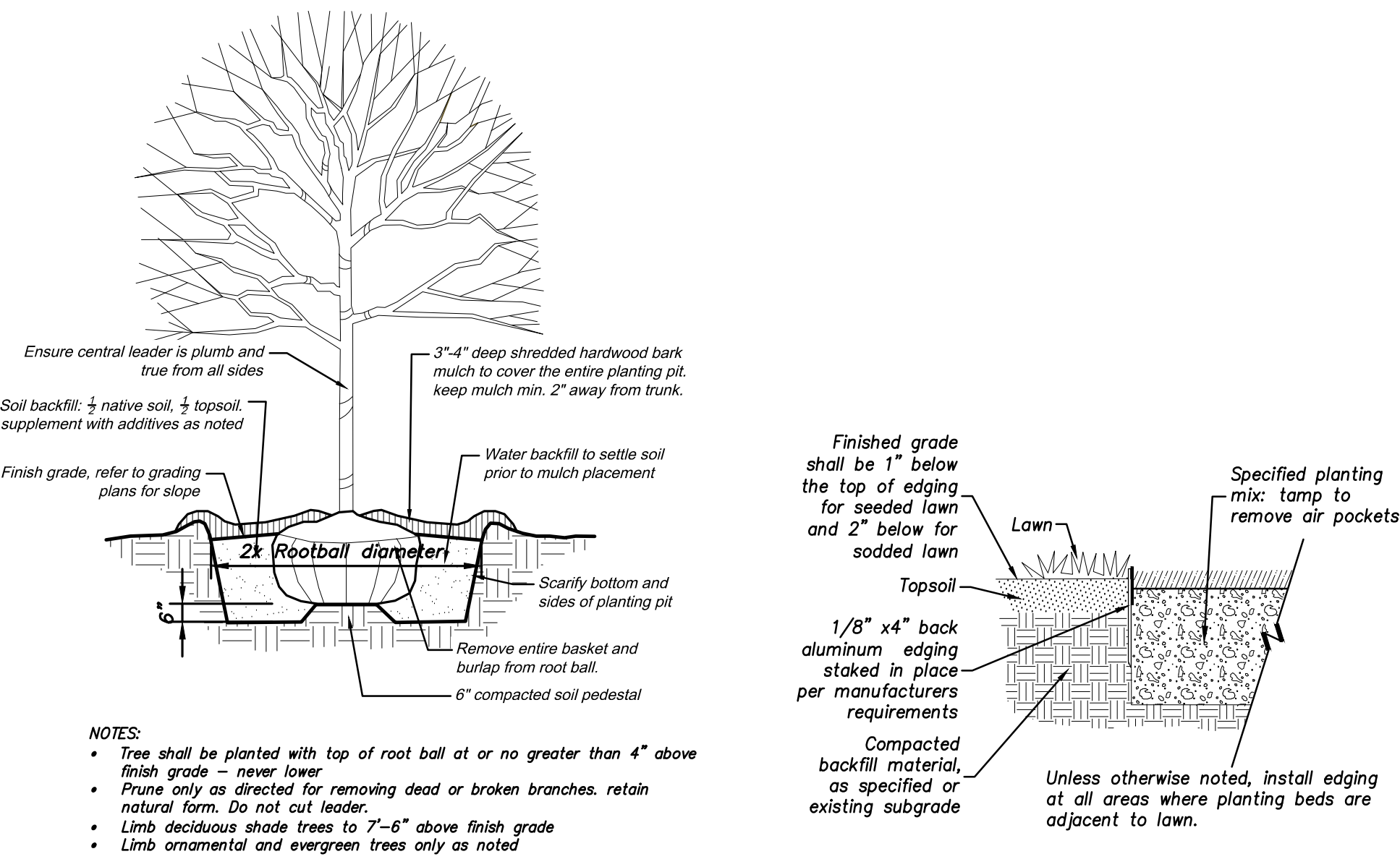


- ### PLANTING NOTES
- All plant substitutions are to be approved by landscape architect
 - Plants shall conform to the minimum measurements noted on the plant schedule
 - Plants shall be true to species and variety and nursery-grown in accordance with good horticultural practices under similar climactic conditions to those of the site for at least two (2) years
 - Mulch is to be $\frac{1}{2}$ river rock mulch free of foreign debris.
 - Due to poor soil conditions, planting holes for all trees are to a minimum of 3x the size of the root ball (typical is 2x) and at a minimum 42" deep.
 - Backfill of planting holes to be $\frac{1}{3}$ native soil that is shredded to be loose, free of clumps larger than 1", and aerated, $\frac{1}{3}$ topsoil (see SEEDING NOTES for topsoil quality and amending), and $\frac{1}{3}$ organic compost. Submit sample of prepared backfill mixture in a 1 gallon ziplock bag completely sealed for review.

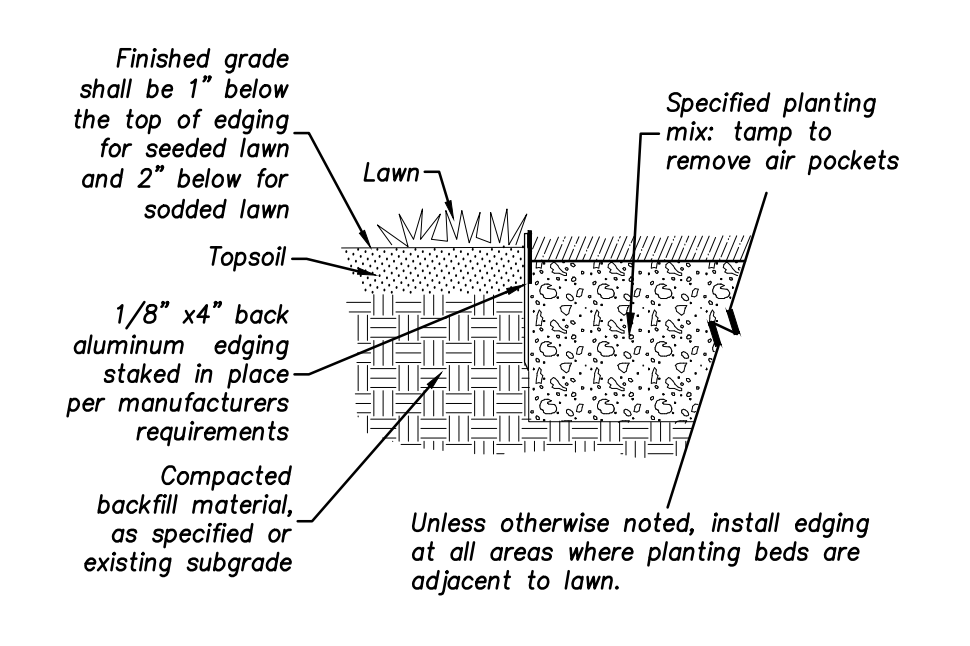
- ### SEEDING NOTES
- Sub grade to be scarified to a min. depth of 2" prior to placing of topsoil.
 - All topsoil is to be tested by a qualified testing agent, pH is to be within 6.0-7.0 range. Provide amendments as recommended by testing agent to balance pH. All amendments are to be uniformly incorporated into the top 4" of soil.
 - Any undulations or irregularities in surface shall be smoothed prior to turfgrass installation. Flooded, washed out areas, damaged or otherwise shall be reconstructed and all grades re-established by the grading contractor in accordance with the drawings.
 - Areas to receive sod or seed removing debris, sticks, rocks, roots, vegetation clumps that exceed 1" in dia. prior to seeding.
 - Set finished grade of soil to 1" below adjacent hardscape surfaces for seeding and 2" below for sod installation.
 - Contractor is responsible for maintaining the accepted, final graded area until sod or seed installation.
 - Once installed, the contractor is responsible for the establishment of the turfgrass to 80% coverage. During the establishment period contractor is responsible for weeding, watering, fertilizing, and other maintenance to ensure vigorous growth and coverage within a time period agreed upon prior to installation by owner, landscape architect and contractor. All visible weeds taller than turf shall be removed during establishment.



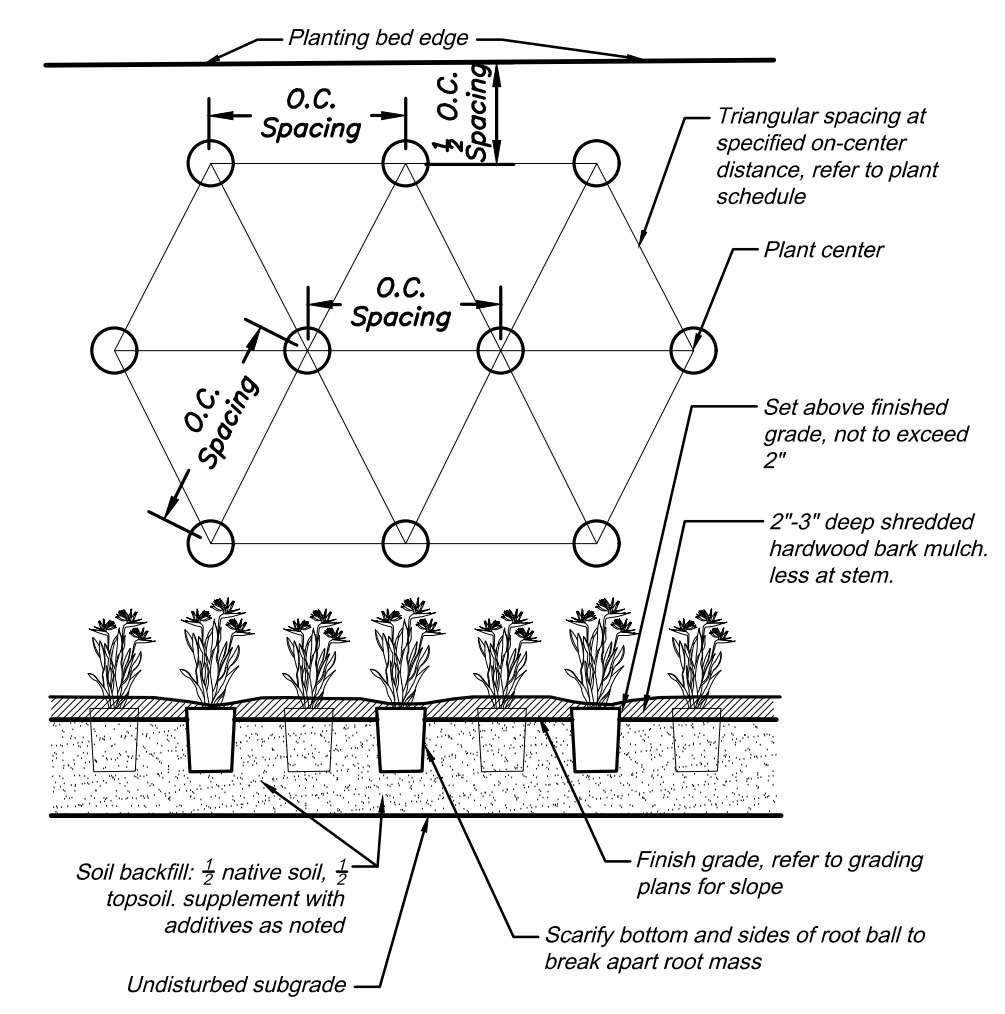
4 SHRUB PLANTING DETAIL
Scale: 3/4"=1'-0"



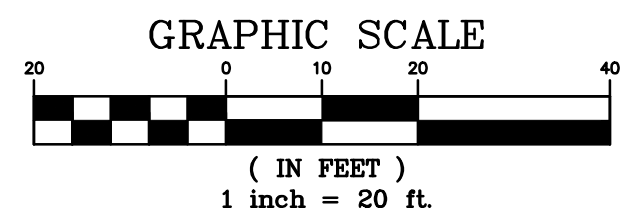
1 TREE PLANTING DETAIL
Scale: 1/4"=1'-0"



2 LANDSCAPE EDGING
Scale: 3/4"=1'-0"



3 PERENNIAL PLANTING DETAIL
Scale: 1/2"=1'-0"



PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
ABT	7	Acer buergerianum	Trident Maple	2.5" CAL		MAX HT 30'
NBT	6	Nyssa sylvatica	Black Tupelo	2.5" CAL		MAX HT 50'
PSC	2	Frunus sargentii 'JFS-KWSB'	Sargent Cherry	2.5" CAL		MAX HT 25'

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	REMARKS
BG	30	Buxus x 'Green Mound'	Green Mound Boxwood	2 Gal		24" o.c.	
CAH	9	Clethra alnifolia 'Hummingbird'	Summersweet	24" Ht		36" o.c.	
HLQ	8	Hydrangea paniculata 'SMHPLQF'	Little Quick Fire Hydrangea	24" Ht		36" o.c.	
IJD	6	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	24" Ht	3 Gal.	36" o.c.	PROVIDE (1) IJD FOR EVERY (9) IRS
IRS	58	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	24" Ht	3 Gal.	36" o.c.	PROVIDE (9) IRS FOR EVERY (1) IJD
IHG	3	Itea virginica 'Henry's Garnet'	Henry's Garnet Sweetpire	24" Ht		60" o.c.	
JSG	19	Juniperus chinensis 'Sea Green'	Sea Green Juniper	3 Gal		72" o.c.	
JB	22	Juniperus sabinia 'Buffalo'	Buffalo Juniper	2 Gal		36" o.c.	
PAJ	17	Physocarpus opulifolius 'Amber Jubilee'	Ninebark	24" Ht		48" o.c.	
VM	21	Viburnum acerifolium	Mapleleaf viburnum	24" Ht		36" o.c.	

ORNAMENTAL GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	REMARKS
CKF	68	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	2 Gal		36" o.c.	
SPT	18	Sporobolus heterolepis 'Tara'	Prairie Dropseed	1 Gal		30" o.c.	

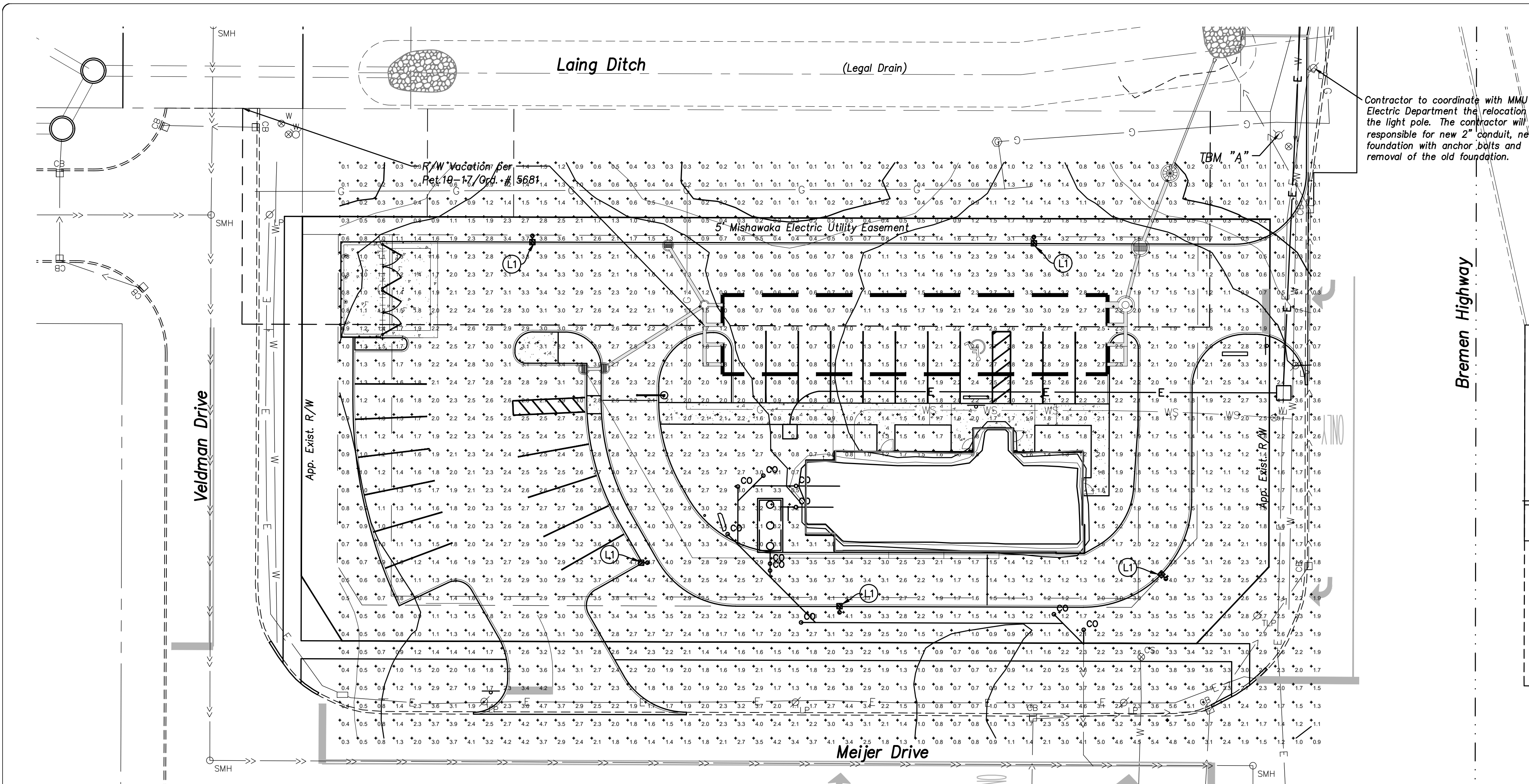
PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	REMARKS
ALM	53	Allium x 'Millenium'	Millenium Ornamental Chive	1 Gal		18" o.c.	
EPM	44	Echinacea purpurea 'Pixie Meadowrite'	Pixie Meadowrite Coneflower	1 Gal		18" o.c.	
EW	22	Echinacea purpurea 'PowWow Wild Berry'	PowWow Wild Berry Coneflower	1 Gal		18" o.c.	

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 Fax: 574.251.4440
 abonmarche.com

TACO BELL
59661 BREMEN HIGHWAY
MISHAWAKA, INDIANA

PROJECT: LANDSCAPE PLAN
 SHEET TITLE: LANDSCAPE PLAN
 DRAWN BY: DEF
 DESIGNED BY: DEF
 PM REVIEW: MJH
 QA/QC REVIEW: RTN
 DATE: 3-25-2020
 SEAL: REGISTERED PROFESSIONAL ENGINEER
 SIGNATURE: [Signature]
 DATE: 7-1-2020
 SCALE: 1" = 20'
 VERT: [Blank]
 ACI JOB #: 20-0205
 SHEET NO: C7.0

1	REVISE MULCH MATERIAL	DEF	7/24/20
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LEGEND

(L1) SITE AREA LIGHTS (SPILL CONTROL)

LUMINAIRE SCHEDULE

QTY	SYMBOL	MODEL NUMBER AND DESCRIPTION
5	L1	DSX1 LED P1 30K T2S MVOLT HS DSX1 LED P1 30K T2S MVOLT WITH HOUSE SHIELD TYPE II SPILL CONTROL MOUNTING HEIGHT = 25'

- NOTES**
- LUMINAIRES ARE MANUFACTURED BY LITHONIA LIGHTING. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
 - ALL WIRE SHALL BE 4-1/C NO. 10 THW COPPER WIRE IN 1 1/2" PVC SCHEDULE 80 CONDUIT FROM THE ELECTRICAL SERVICE PANEL TO THE LIGHTING FOUNDATION AND IN THE POLES TO THE LUMINAIRES. THERE WILL BE NO UNDERGROUND SPLICES ALLOWED AND ALL WIRE SPLICES SHALL BE IN THE POLE BASES.
 - COVERS FOR LIGHTING PULL BOXES SHALL BE WATERPROOF AND BEAR THE WORD "LIGHTING" ON THE COVER.
 - LUMINAIRE POLES SHALL BE FIELD VERIFIED AND APPROVED BY ENGINEER PRIOR TO ORDERING MATERIALS OR PLACING FOUNDATIONS.
 - LUMINAIRE POLES SHALL BE LOCATED 2' BEHIND BACK OF CURB, UNLESS OTHERWISE NOTED.
 - FOUNDATIONS SHALL LEVEL WITH ADJACENT FINISHED GRADE AND HEIGHT ABOVE FINISHED GRADE SHALL MATCH EXISTING LUMINAIRE FOUNDATIONS.
 - FIXTURE ORIENTATION SHALL BE PERPENDICULAR TO THE ADJACENT PAVEMENT UNLESS OTHERWISE NOTED ON PLANS. ORIENTATION OF POLES SHALL BE FIELD VERIFIED AND APPROVED BY ENGINEER PRIOR TO INSTALLATION.
 - ALL SITE LIGHTING SHALL BE LIMITED TO 25' IN HEIGHT. 90° CUT-OFF FIXTURES SHALL BE REQUIRED FOR BOTH POLE AND WALL MOUNTED FIXTURES. SHIELDING OF LIGHTING SHALL BE REQUIRED IN THE AREAS ADJACENT TO (IN SIGHT OF) RESIDENTIAL AREAS. LIGHTING WITHIN 50' OF RESIDENTIALLY ZONED PROPERTY SHALL BE LIMITED TO 15' IN HEIGHT.

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 abonmarche.com

TACO BELL
 3615 BREMEN HIGHWAY
 MISHAWAKA, INDIANA

PROJECT: LIGHTING PLAN

D-Series Size 1 LED Area Luminaire

Specifications

- EPA: 1.01 ft (0.31m)
- Length: 33" (0.84m)
- Width: 13" (0.33m)
- Height H1: 7-1/2" (0.19m)
- Height H2: 3-1/2" (0.09m)
- Weight (max): 27 lbs (12.3kg)

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPLA NLTAR2 PIRHN DBBKD

Series	Optic	Color Temperature	Mounting	Voltage	Mounting
DSX1 LED	Forward optics				
	P1	P4	P7	40K	4000K
	P2	P5	P8	50K	5000K
	P3	P6	P9		
	Recessed optics				
	P10	P12			
	P11	P13			
	Control options				
	Shipped installed				
Shipped separately					

Ordering Information

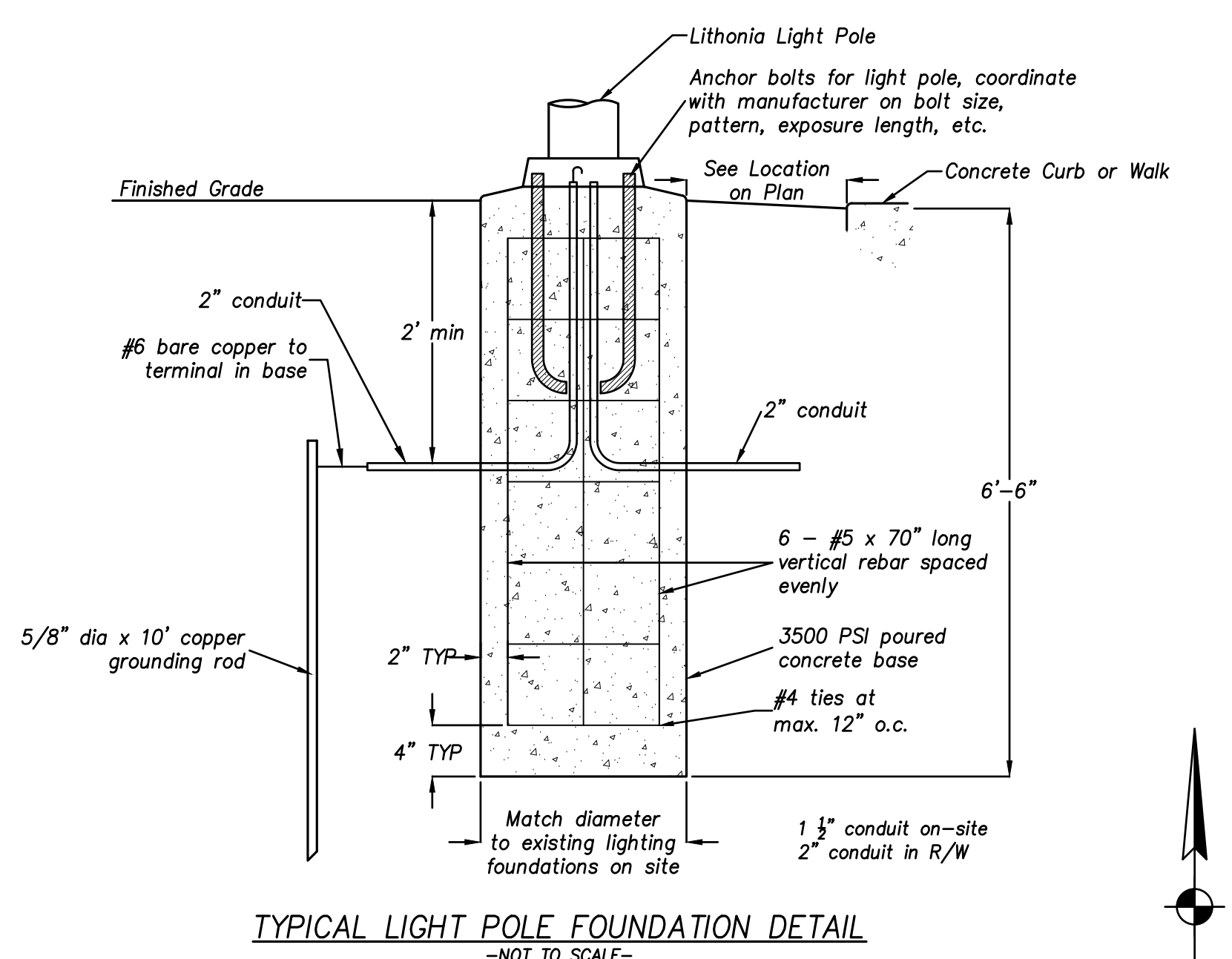
Accessories

Options

Drilling

Tenon Mounting Slipfitter**

Series	Optic	Color Temperature	Mounting	Voltage	Mounting
DSX1 LED	Forward optics				
	P1	P4	P7	40K	4000K
	P2	P5	P8	50K	5000K
	P3	P6	P9		
	Recessed optics				
	P10	P12			
	P11	P13			
	Control options				
	Shipped installed				
Shipped separately					



REGISTERED PROFESSIONAL ENGINEER
 No. 60016991
 STATE OF INDIANA

SIGNATURE: [Signature]

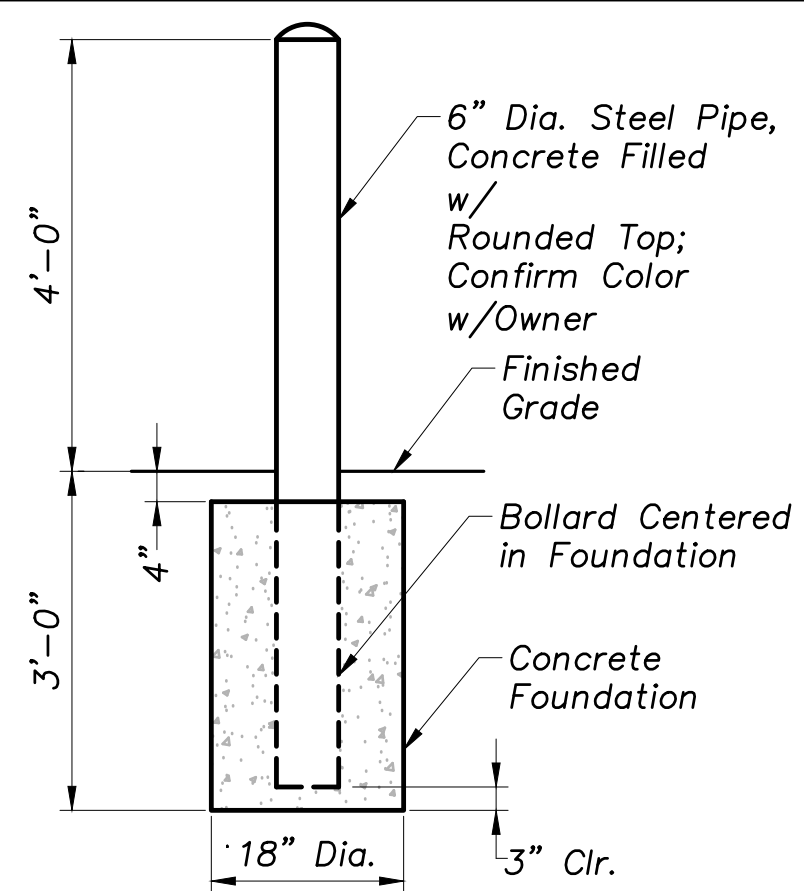
DATE: 7-1-2020

SCALE: HORZ: 1" = 20' VERT: 1" = 20'

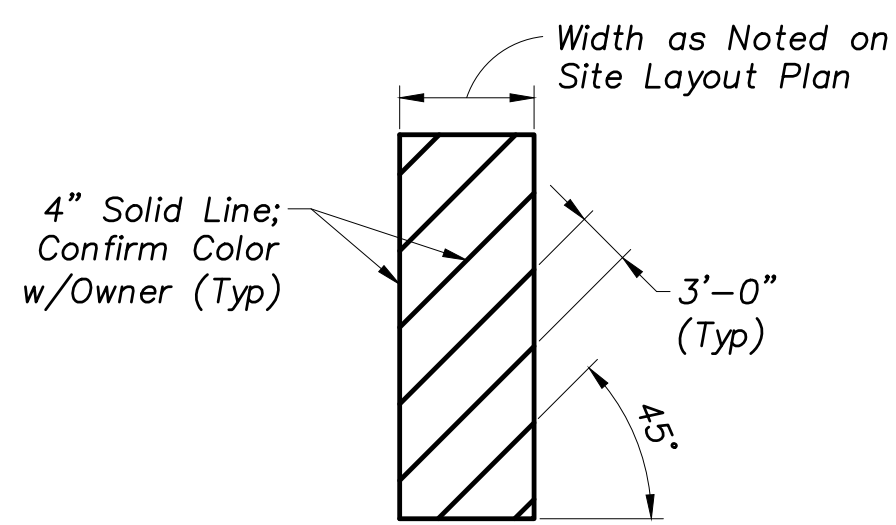
ACT JOB # 20-0205

SHEET NO. C7.1

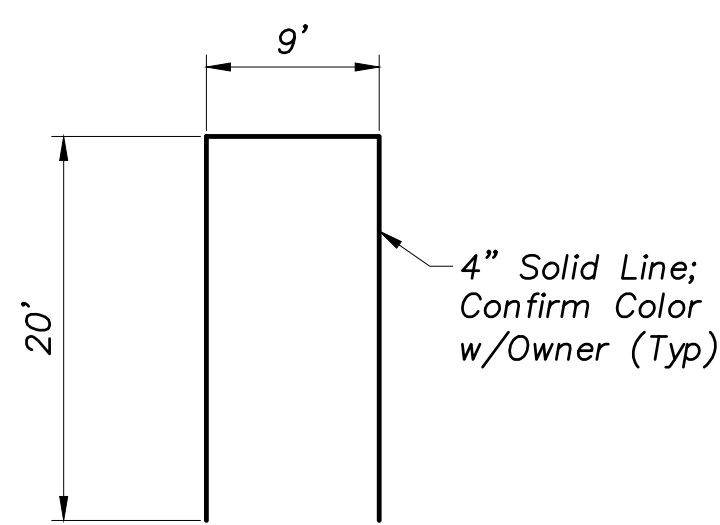
2	UPDATE ADDRESS	DEF	8/10/20
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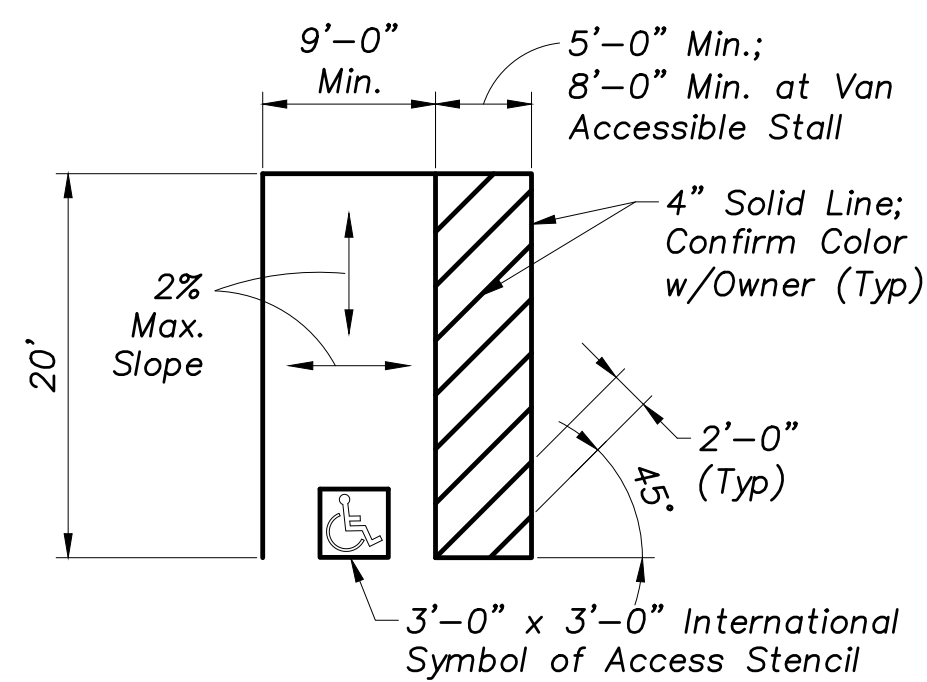
PIPE BOLLARD
(NOT TO SCALE)



**PAVEMENT MARKINGS:
CROSSWALK & NO ACCESS AREA**
(NOT TO SCALE)

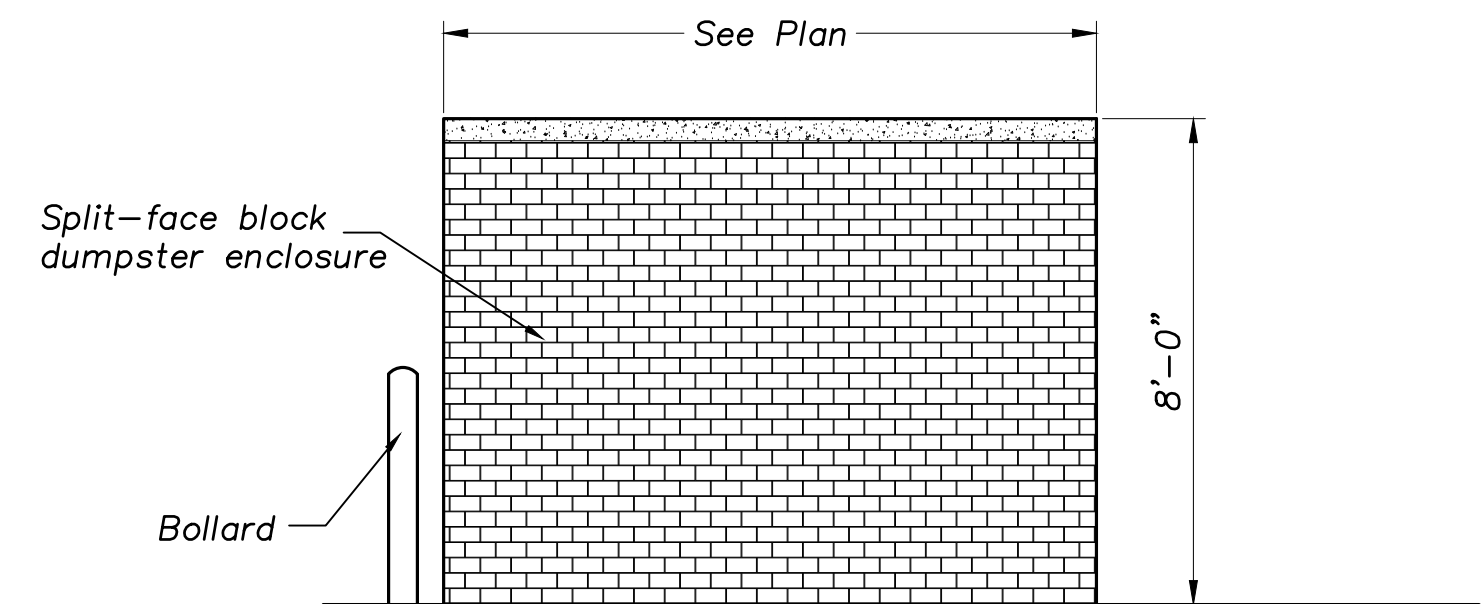
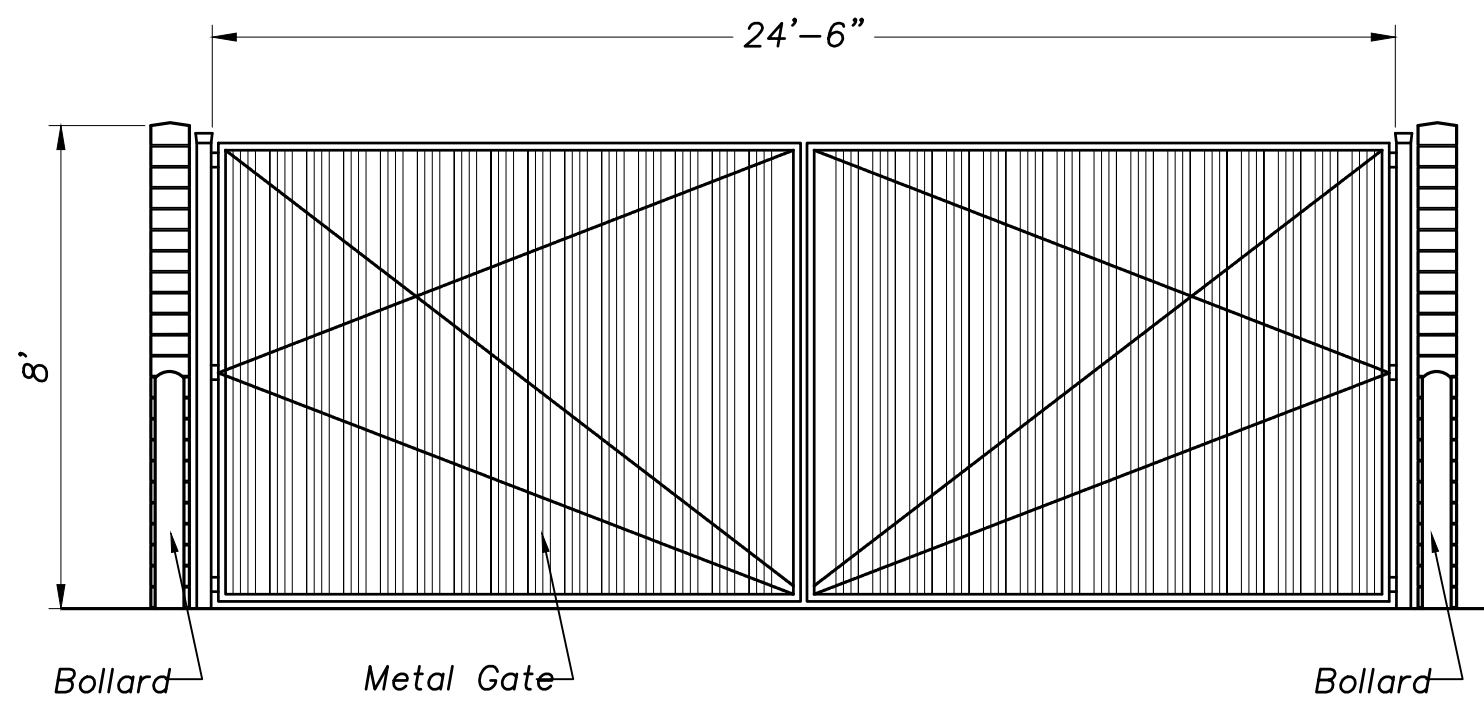


STANDARD SPACE

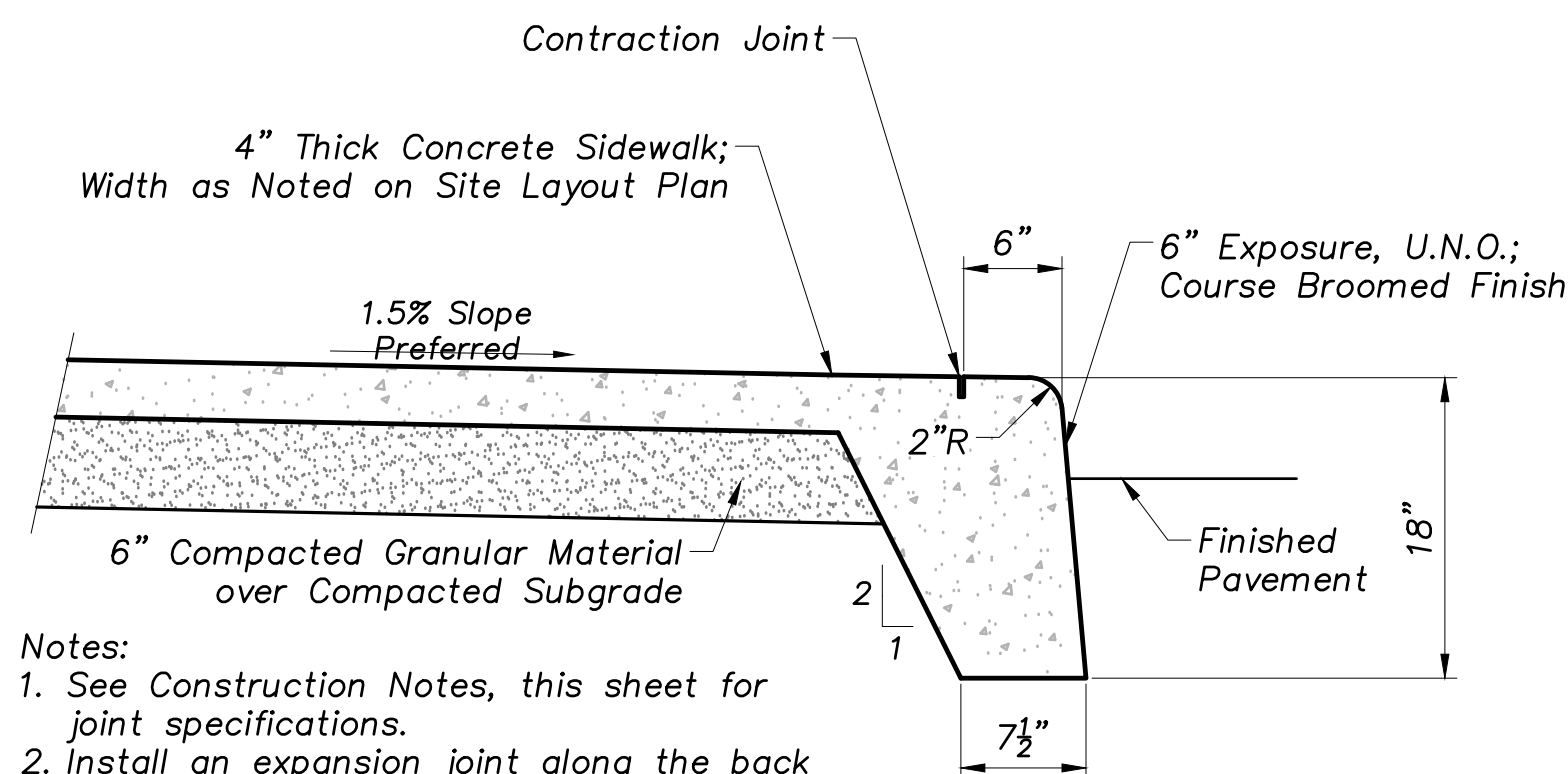


ADA ACCESSIBLE SPACE

**PAVEMENT MARKINGS:
TYPICAL PARKING SPACE**
(NOT TO SCALE)

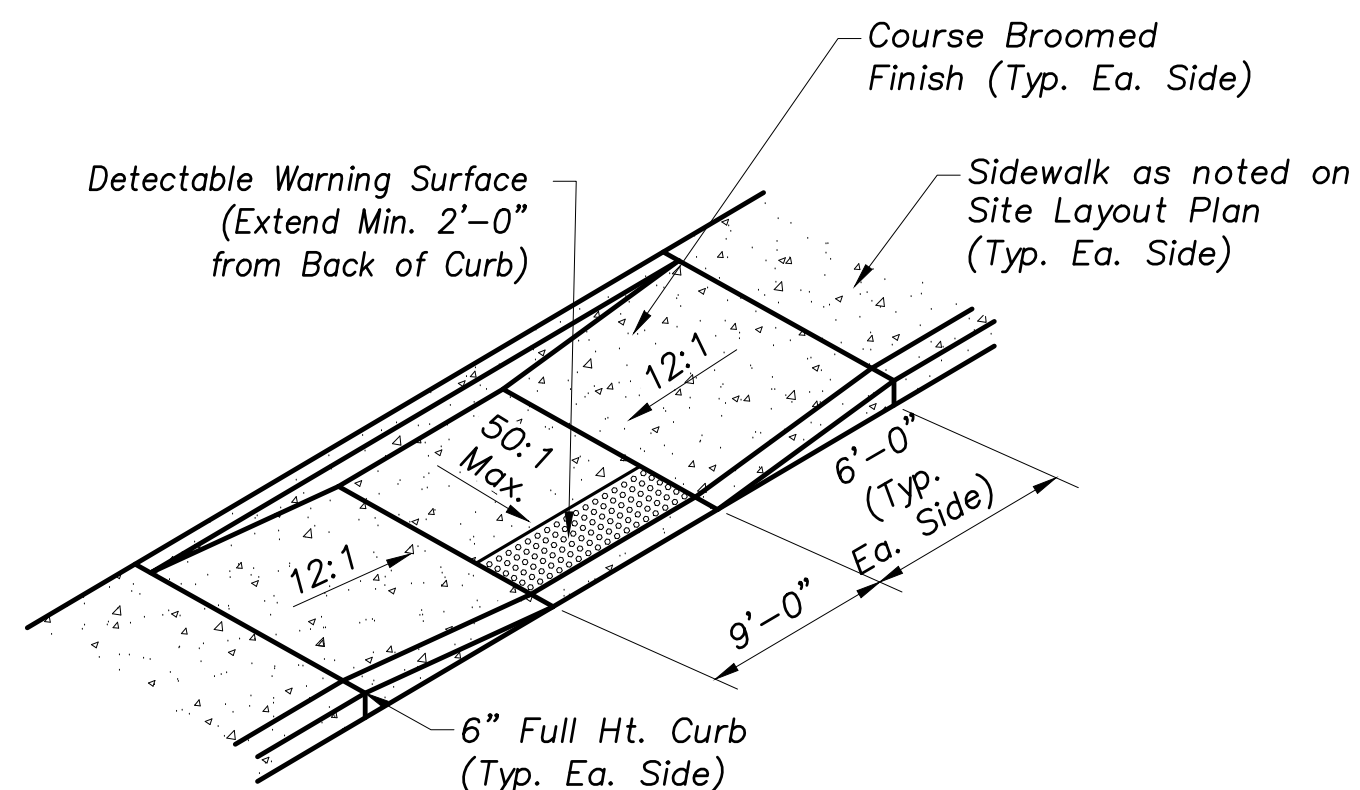


DUMPSTER ENCLOSURE ELEVATIONS
(NOT TO SCALE)



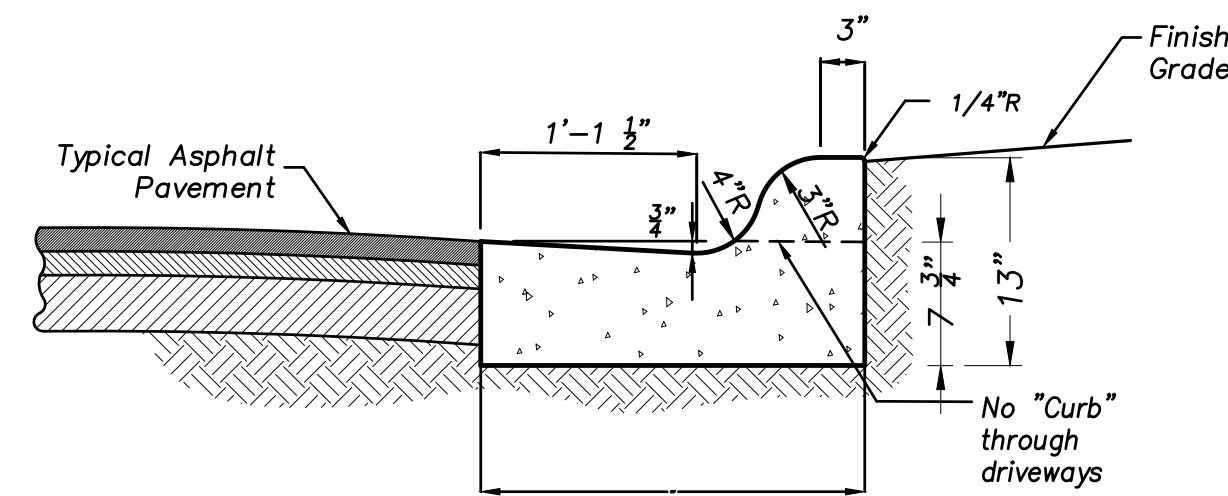
- Notes:
1. See Construction Notes, this sheet for joint specifications.
2. Install an expansion joint along the back of walk, if adjacent to a structure.

CONCRETE SIDEWALK WITH INTEGRAL CURB
(NOT TO SCALE)

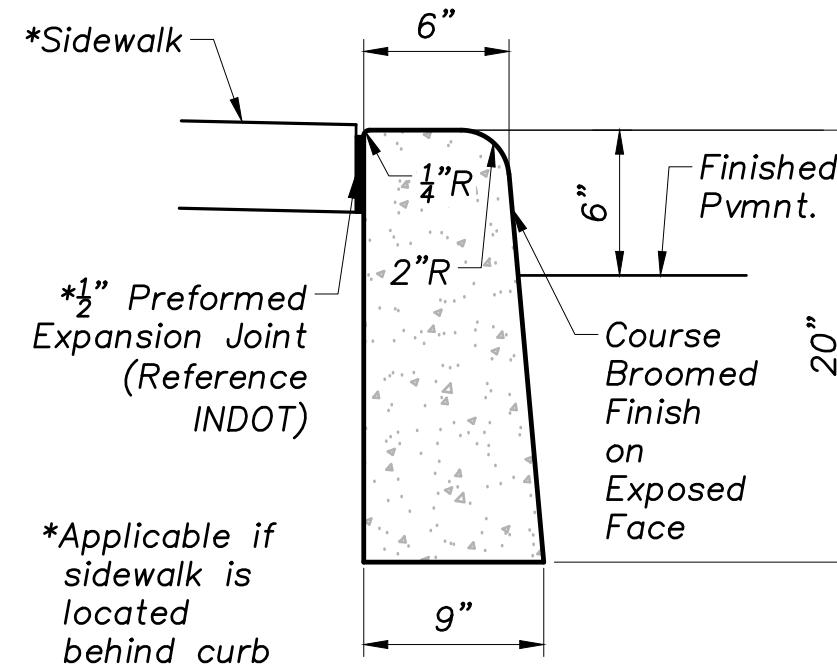


RAMP ISOMETRIC

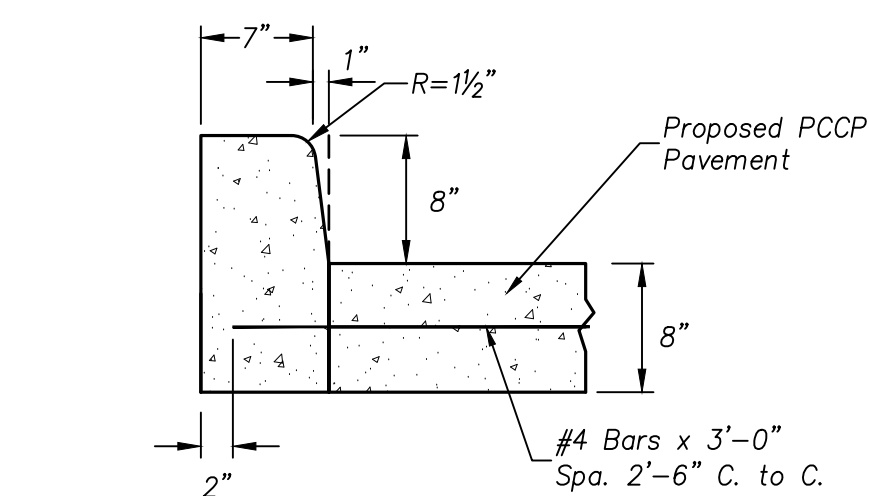
SIDEWALK CURB RAMP
(NOT TO SCALE)



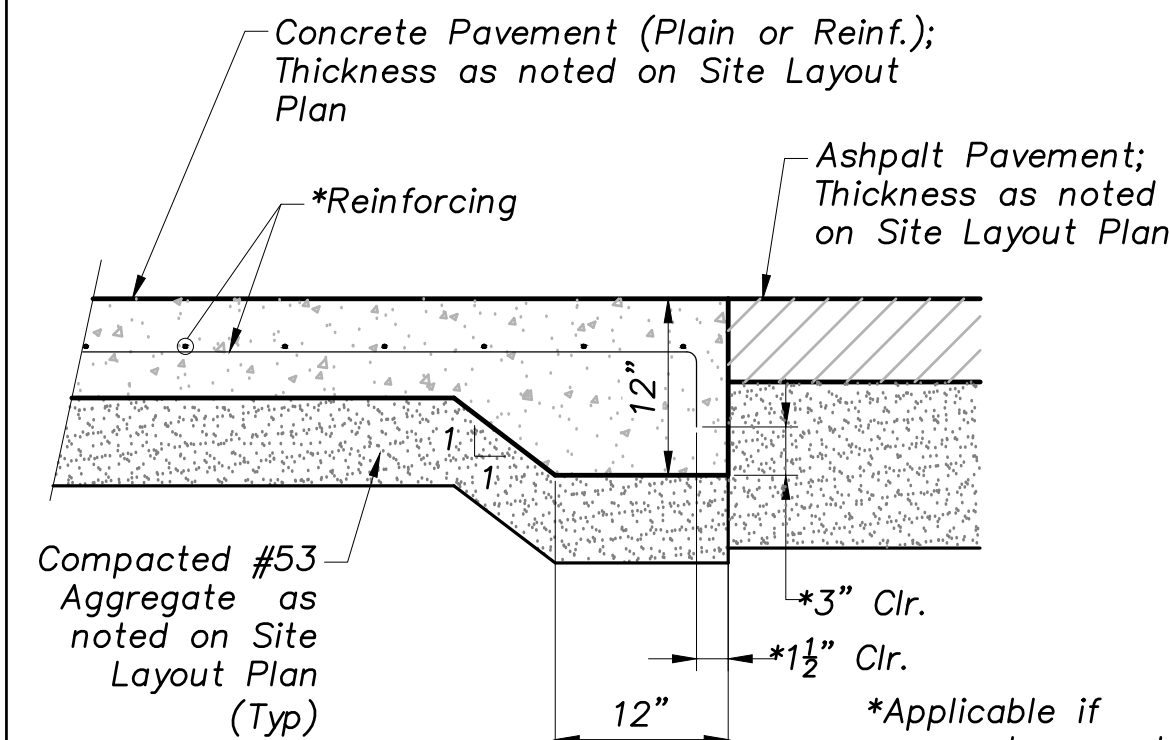
COMBINATION CURB & GUTTER
(NOT TO SCALE)



CONCRETE CURB
(NOT TO SCALE)

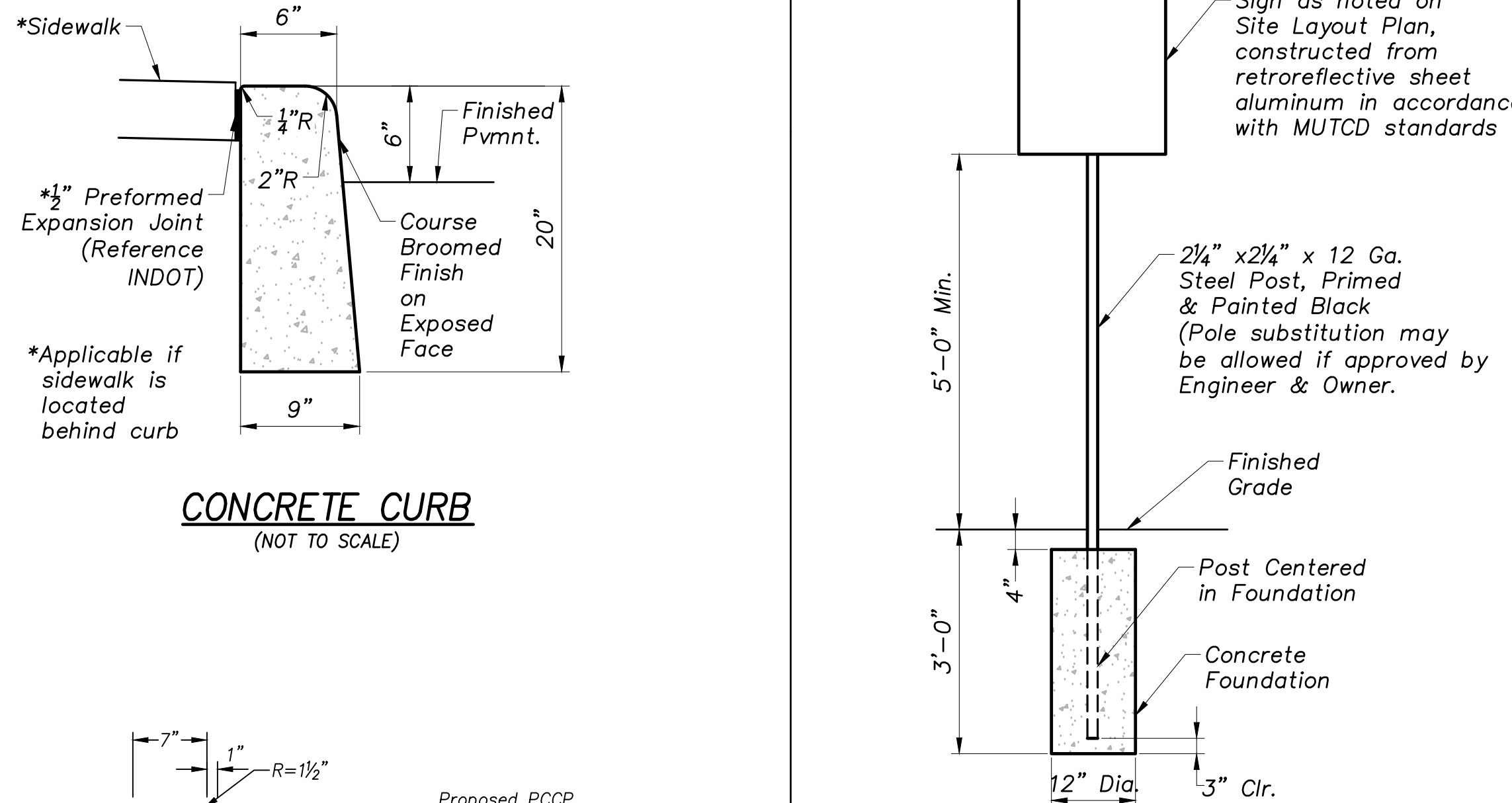


INTEGRAL CONCRETE CURB, 8\"/>



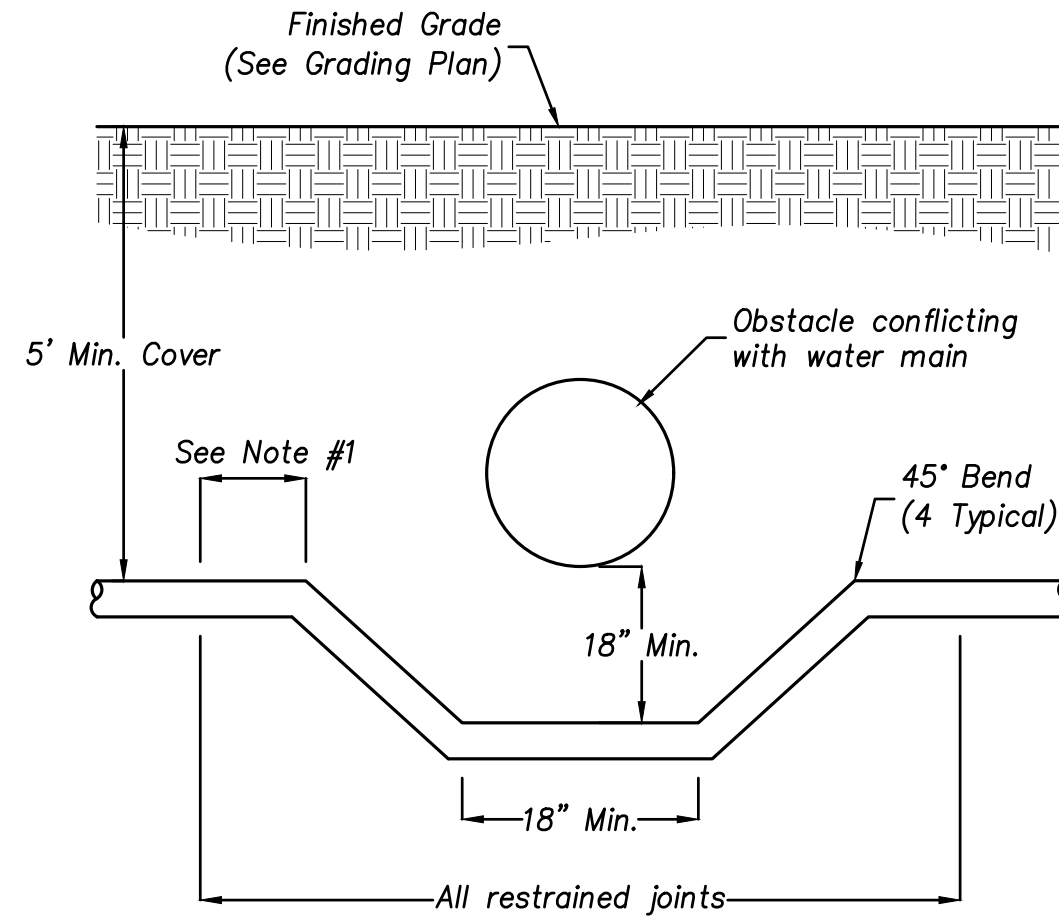
Note: Thicken edge of concrete as shown at transitions from concrete to asphalt pavement.

CONCRETE PAVEMENT THICKENED EDGE
(NOT TO SCALE)



TYPICAL SIGN & POST
(NOT TO SCALE)

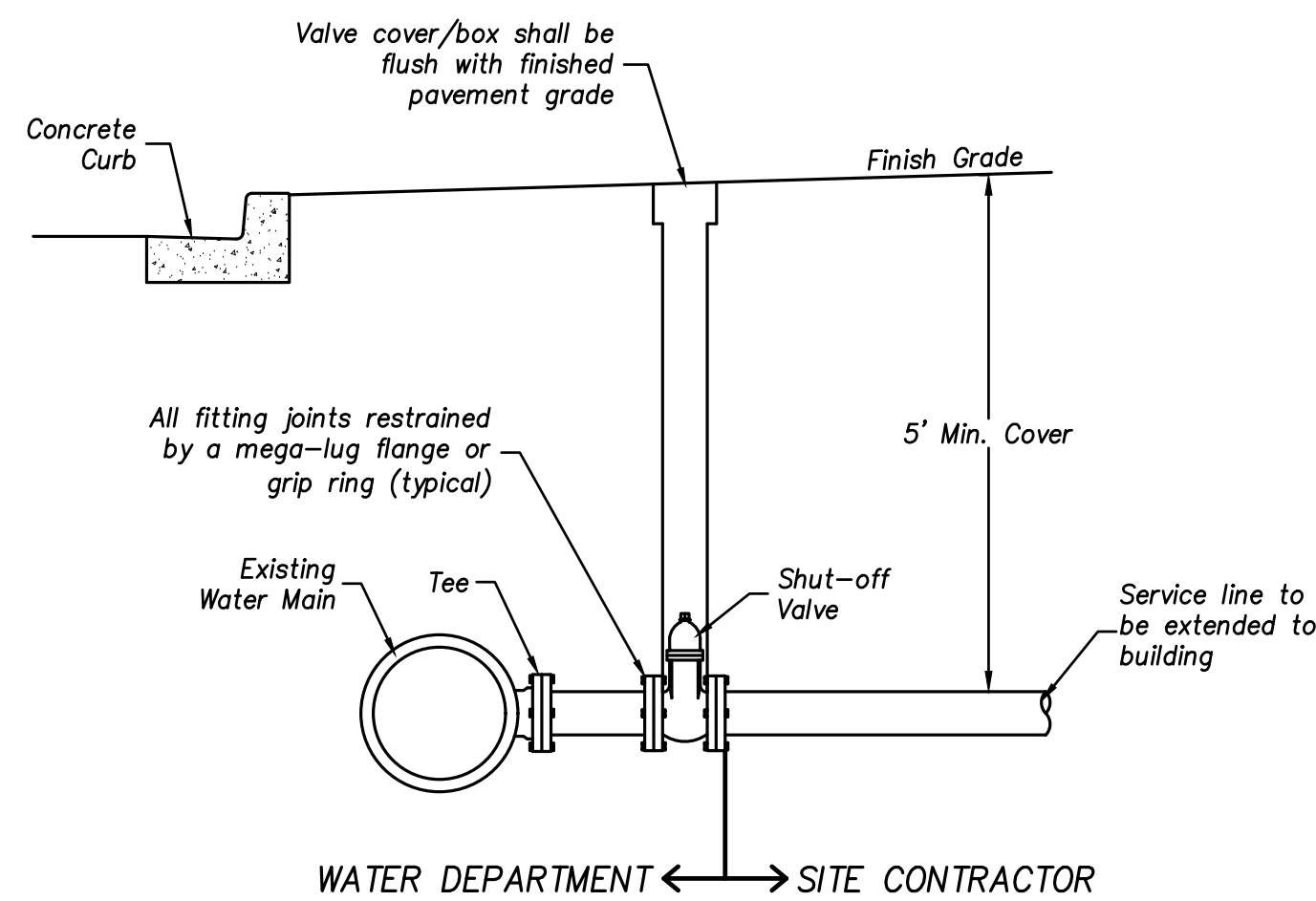
2	UPDATE ADDRESS	DEF	8/10/20
RNUM	RDESC	RBY	RDATE



NOTES:

1. Minimum restrained joint length required for the given pipe size, depth, material, soil condition, etc. Use 1.5:1 safety factor and 150 psi test pressure (Typical Each Side)
2. Provide adequate support if the obstacle is in place before the water main is constructed.

WATER PIPE / UTILITY CONFLICT CROSSINGS
(NOT TO SCALE)



WATER SERVICE DETAIL
(DOMESTIC AND FIRE)
(NOT TO SCALE)

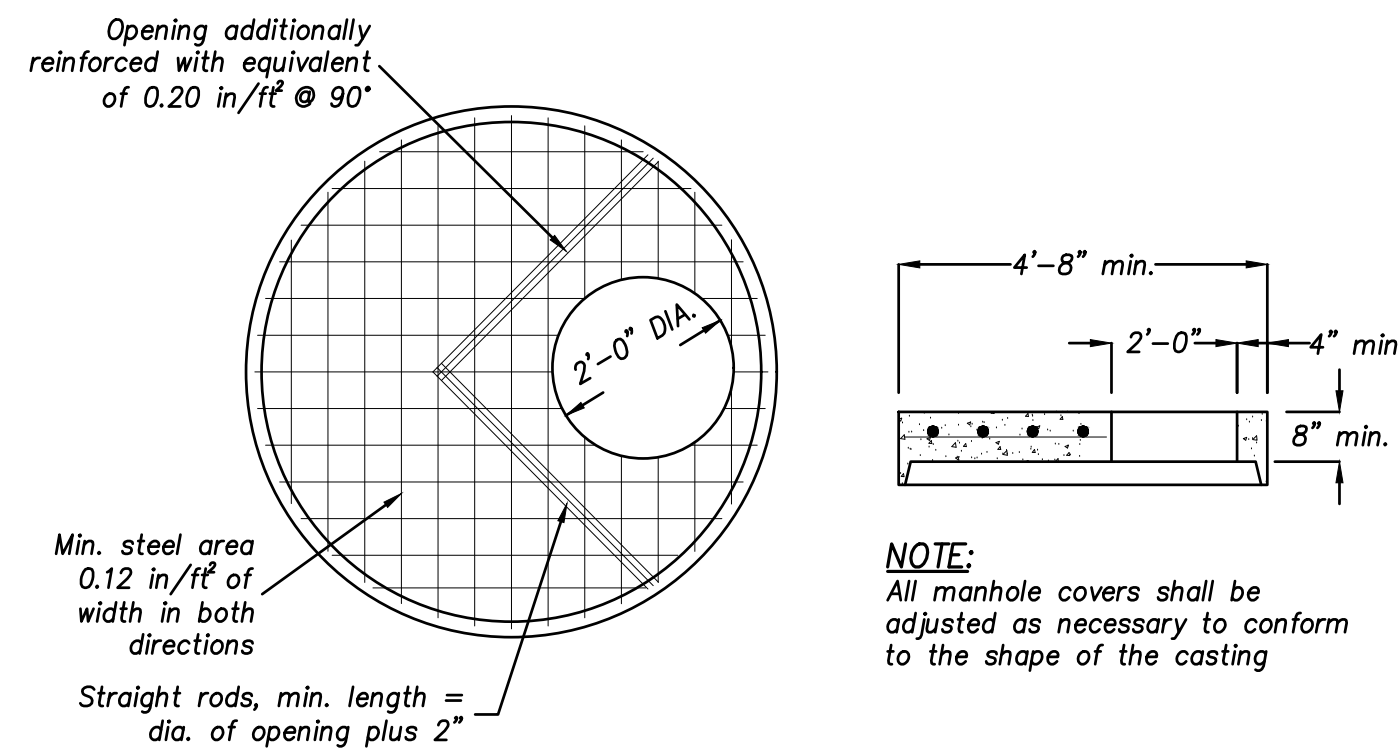
STORM SEWER CASTINGS

All castings shall be stamped with a Fish Image and the lettering "Dump No Waste" "Drains to Waterways"

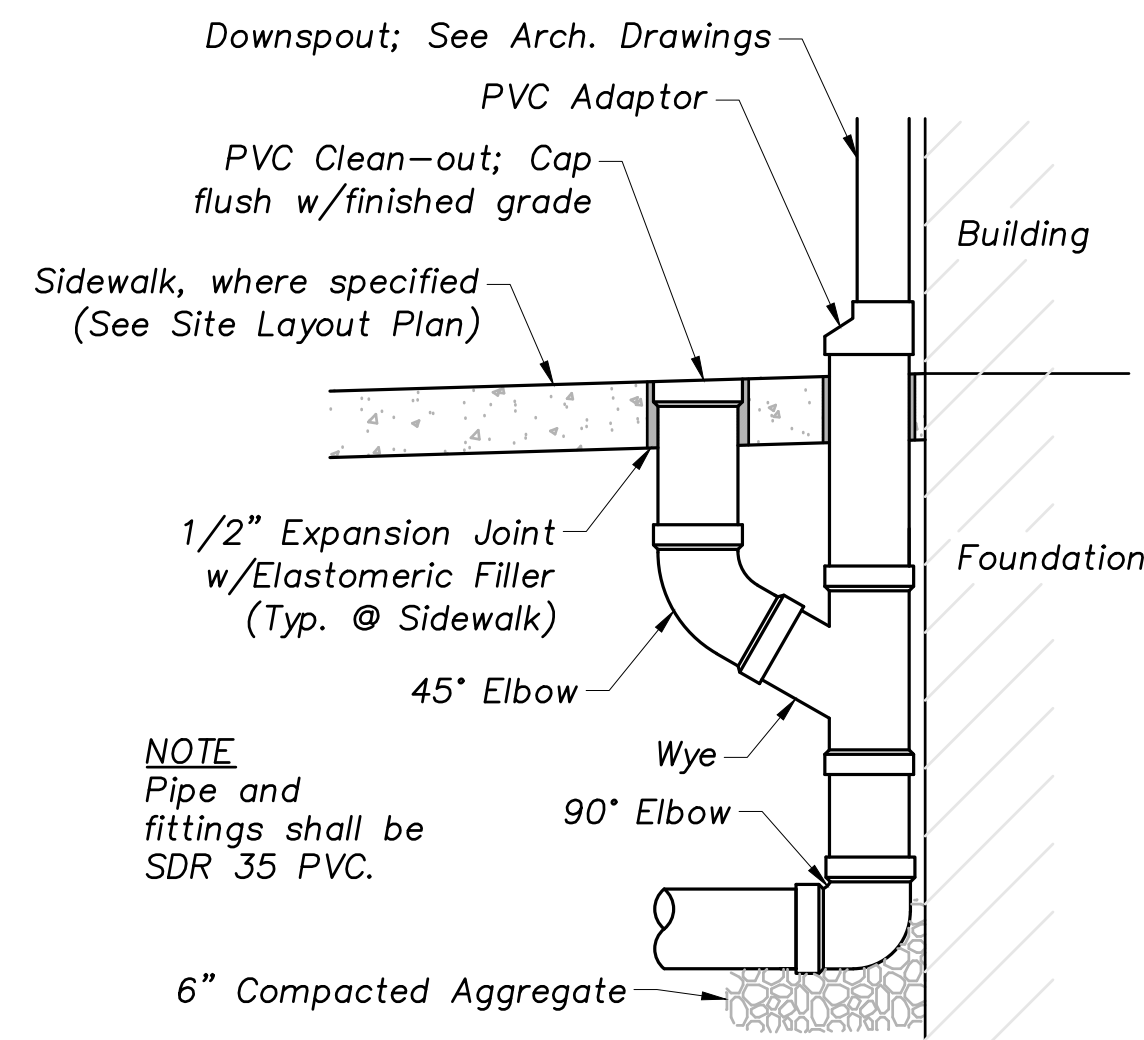
STRUCTURES IN CURB LINE
NEENAH R-3010 or approved equal

STRUCTURES IN PAVEMENT
NEENAH R-2502 or approved equal

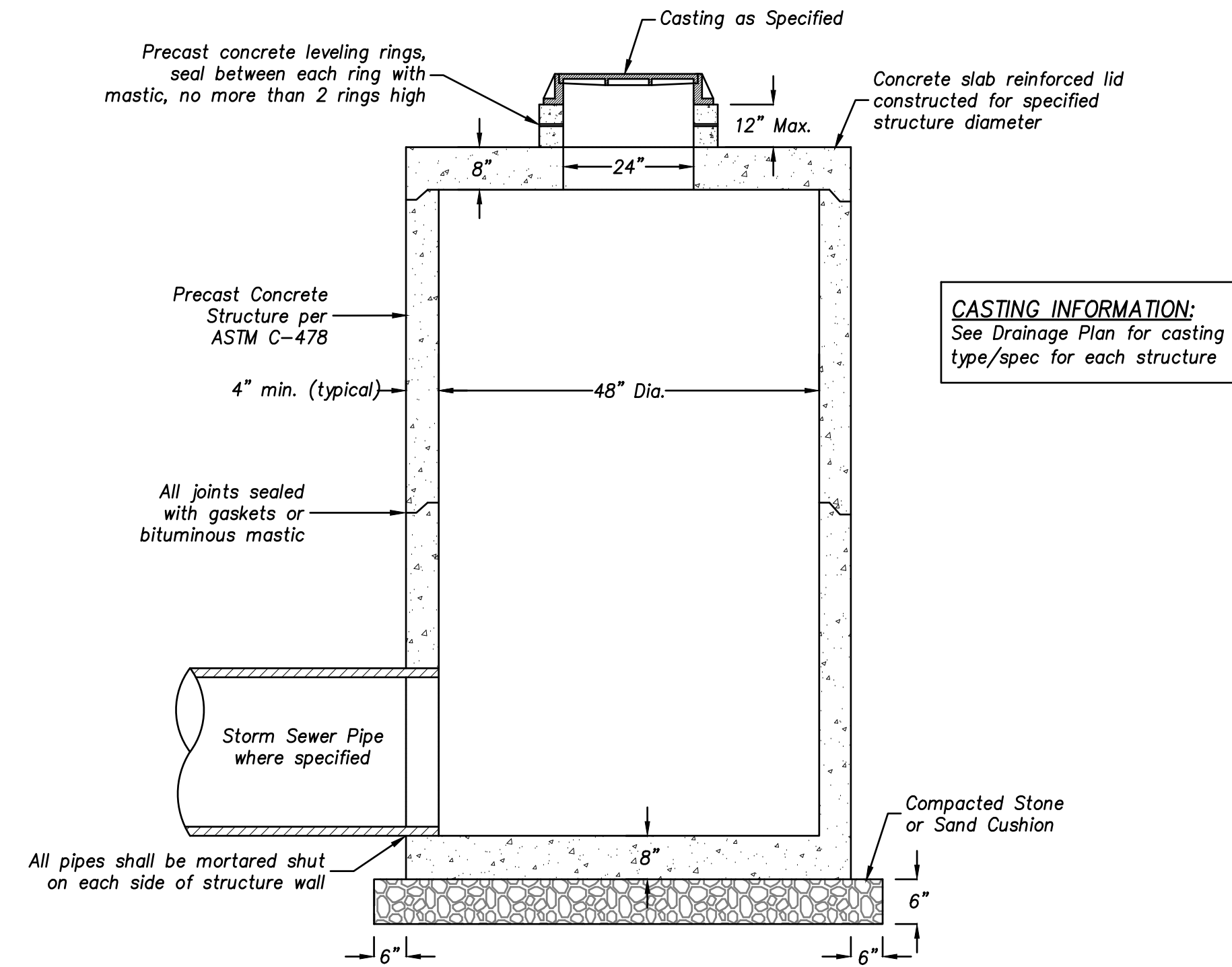
STRUCTURES IN LAWN
NEENAH R-2560-C or approved equal



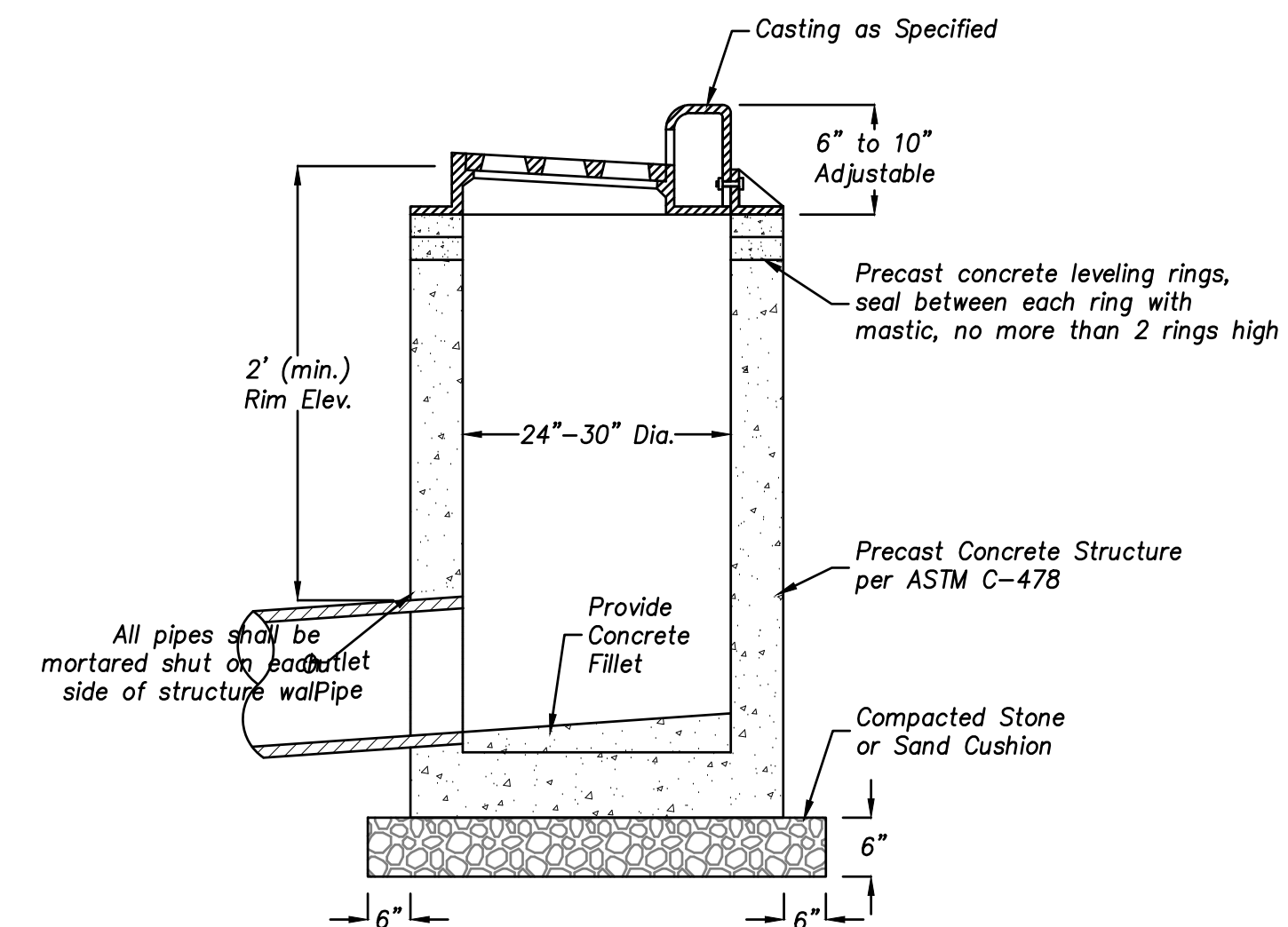
COVER CAP FOR 48" MANHOLE
(NOT TO SCALE)



DOWNSPOUT CONNECTOR
(NOT TO SCALE)

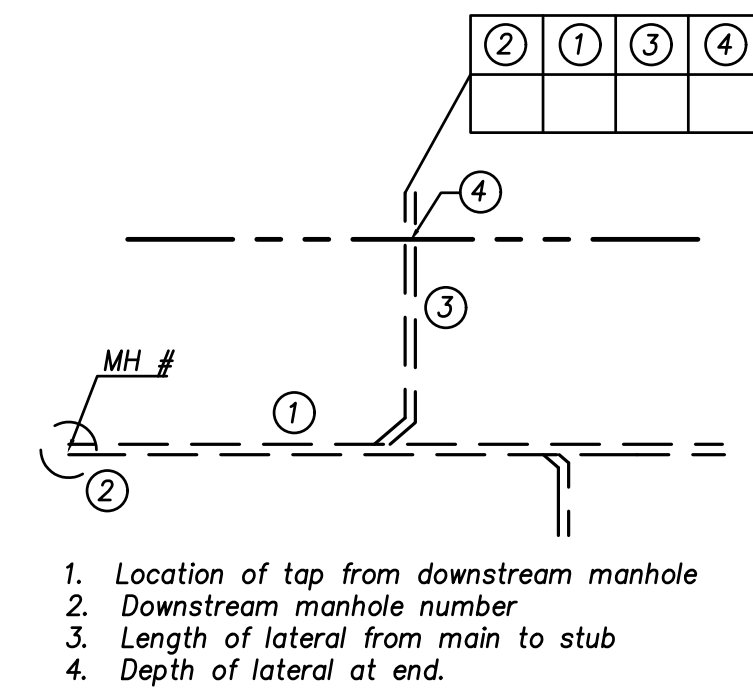
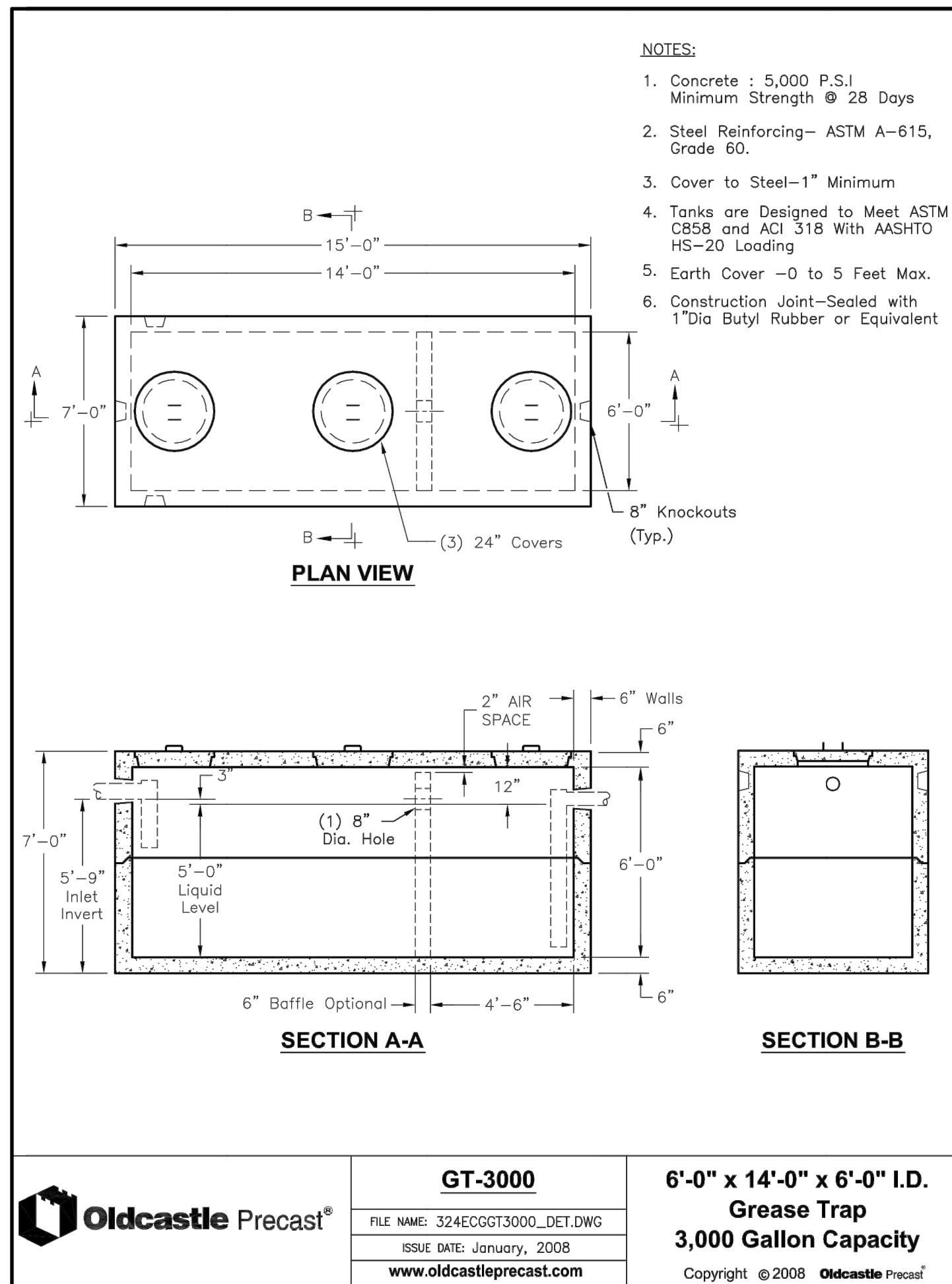


STANDARD 48" STORM MANHOLE
(NOT TO SCALE)

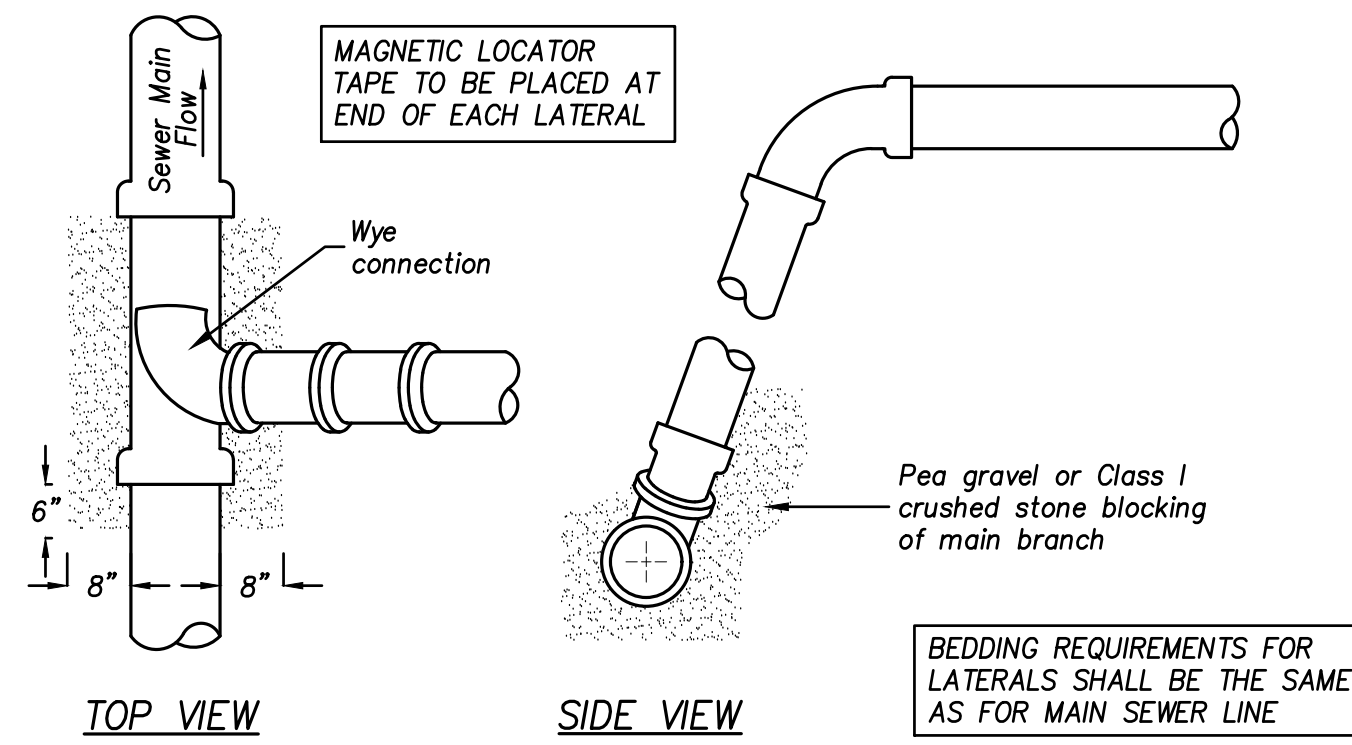


STANDARD STORM INLET
(NOT TO SCALE)

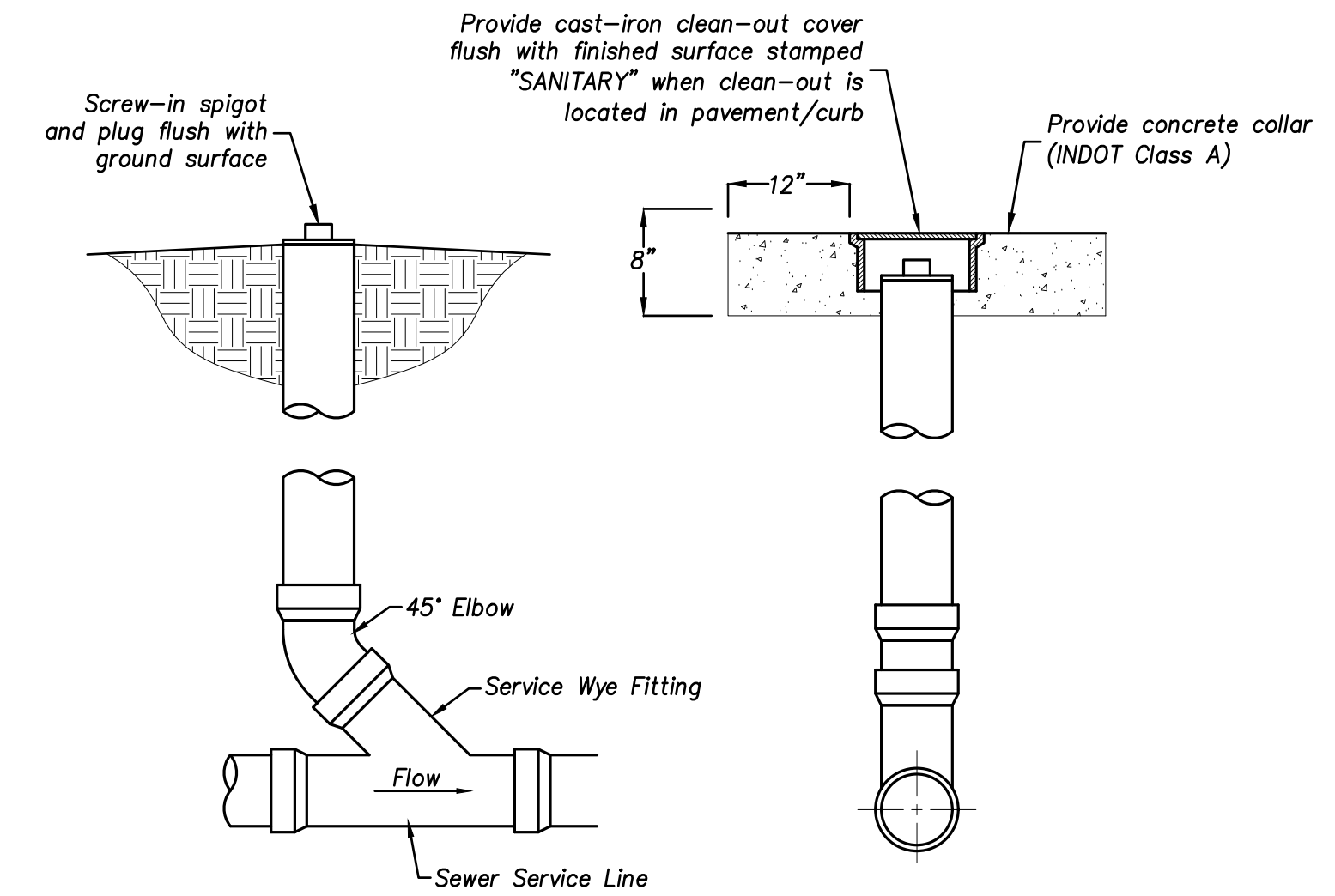
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RNUM	RDESC	RBY	RDATE



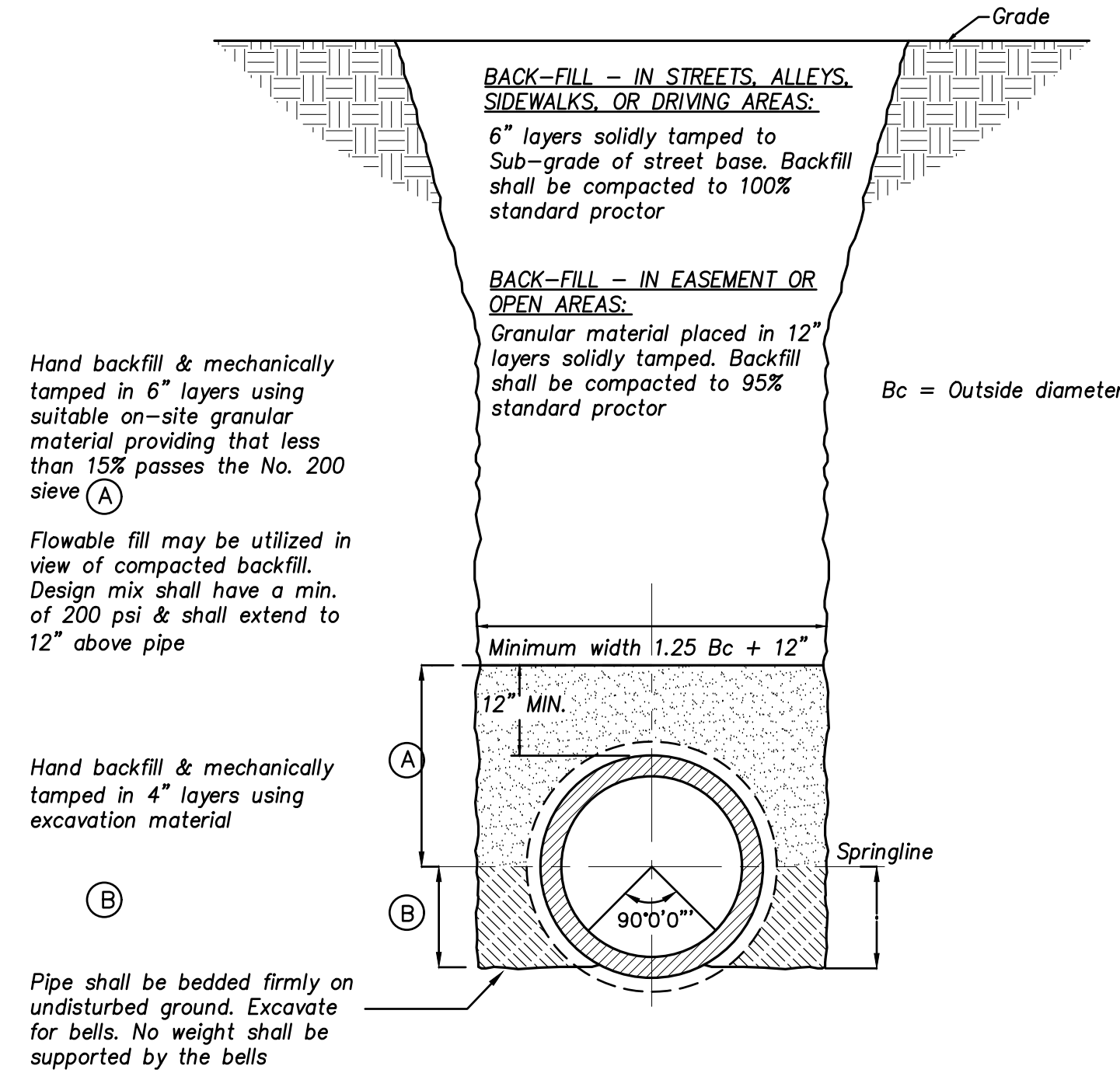
AS-BUILT DETAIL
(NOT TO SCALE)



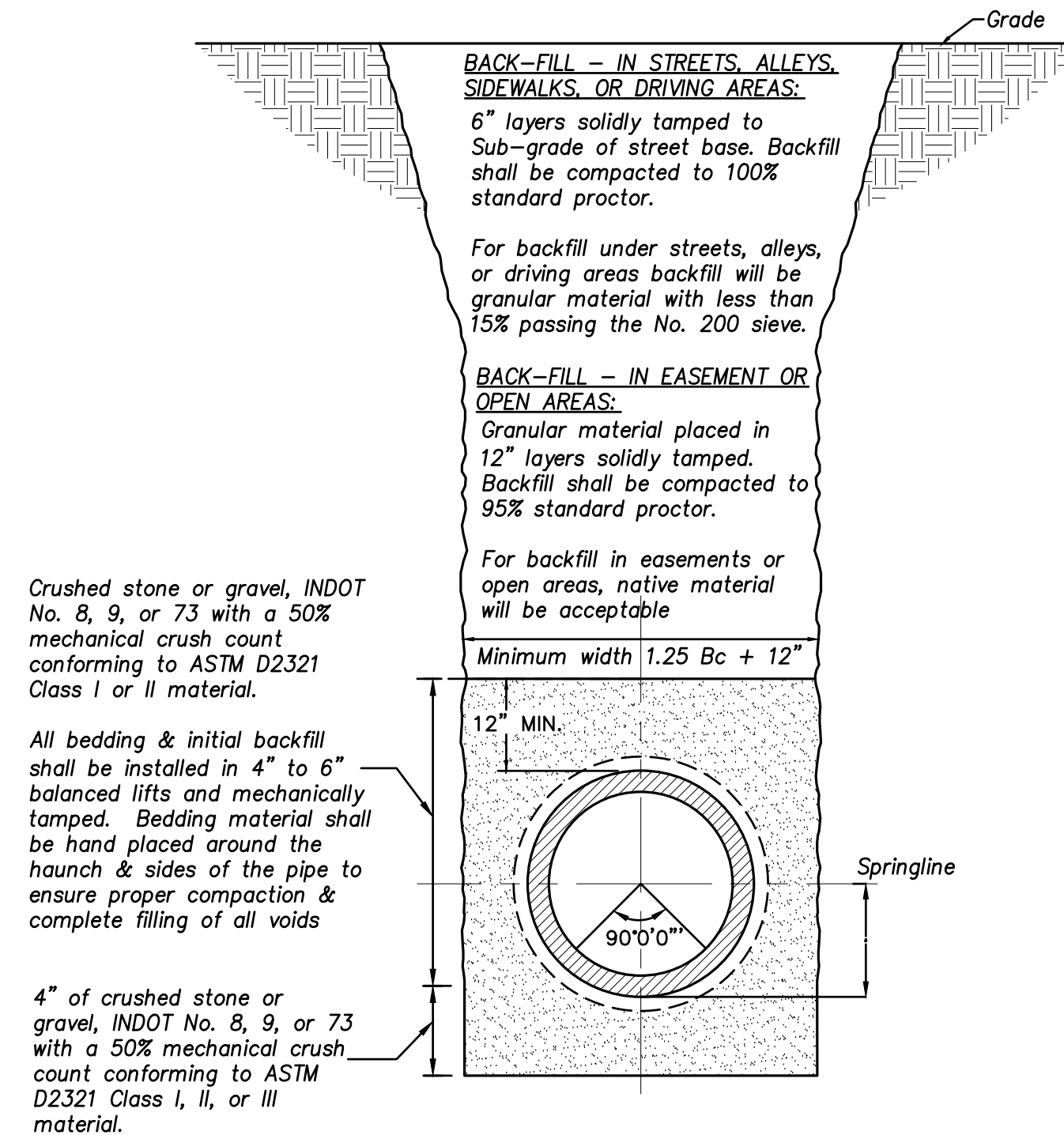
LATERAL CONNECTION DETAIL
(NOT TO SCALE)



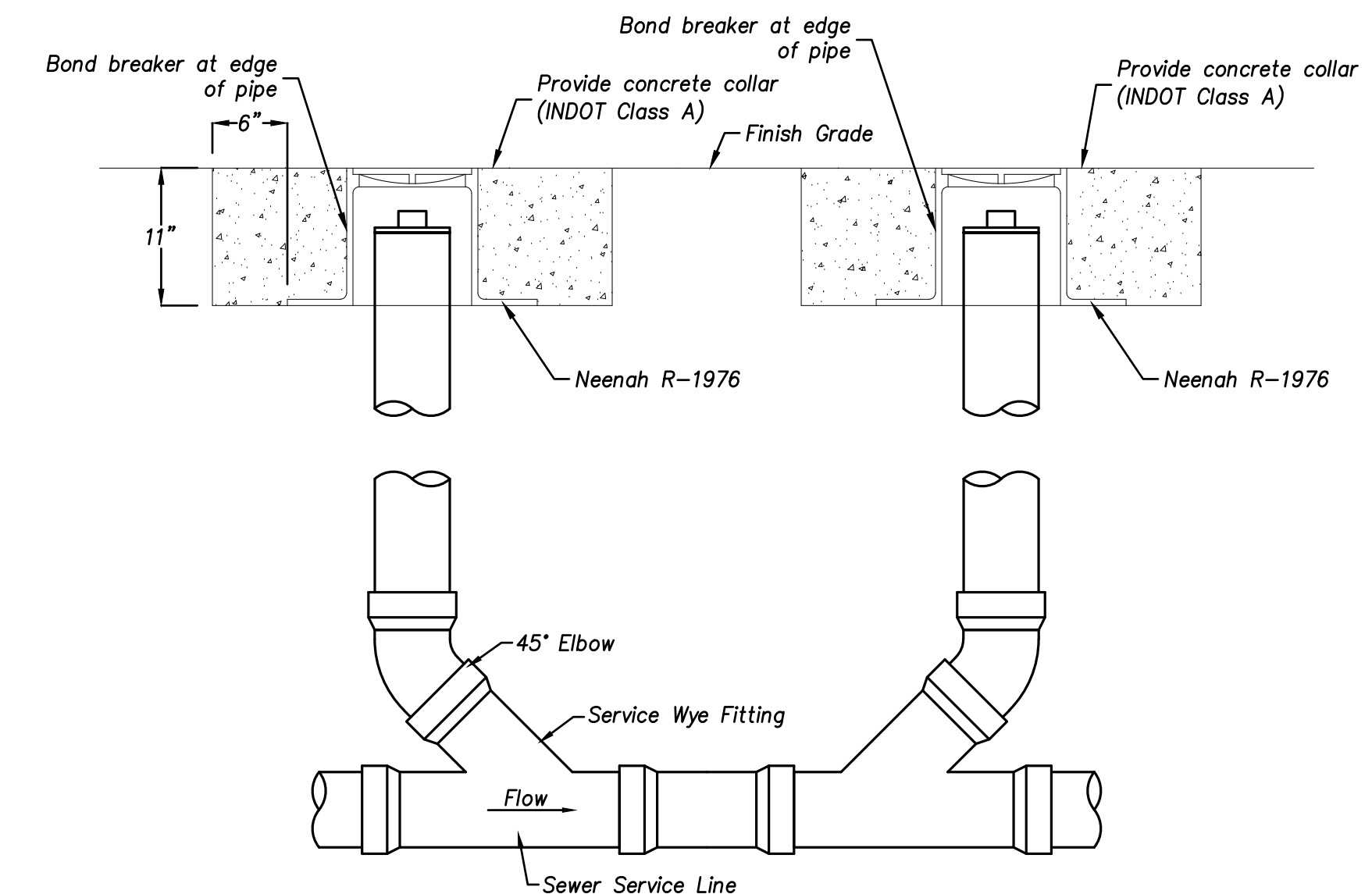
SEWER CLEAN-OUT DETAILS
(NOT TO SCALE)



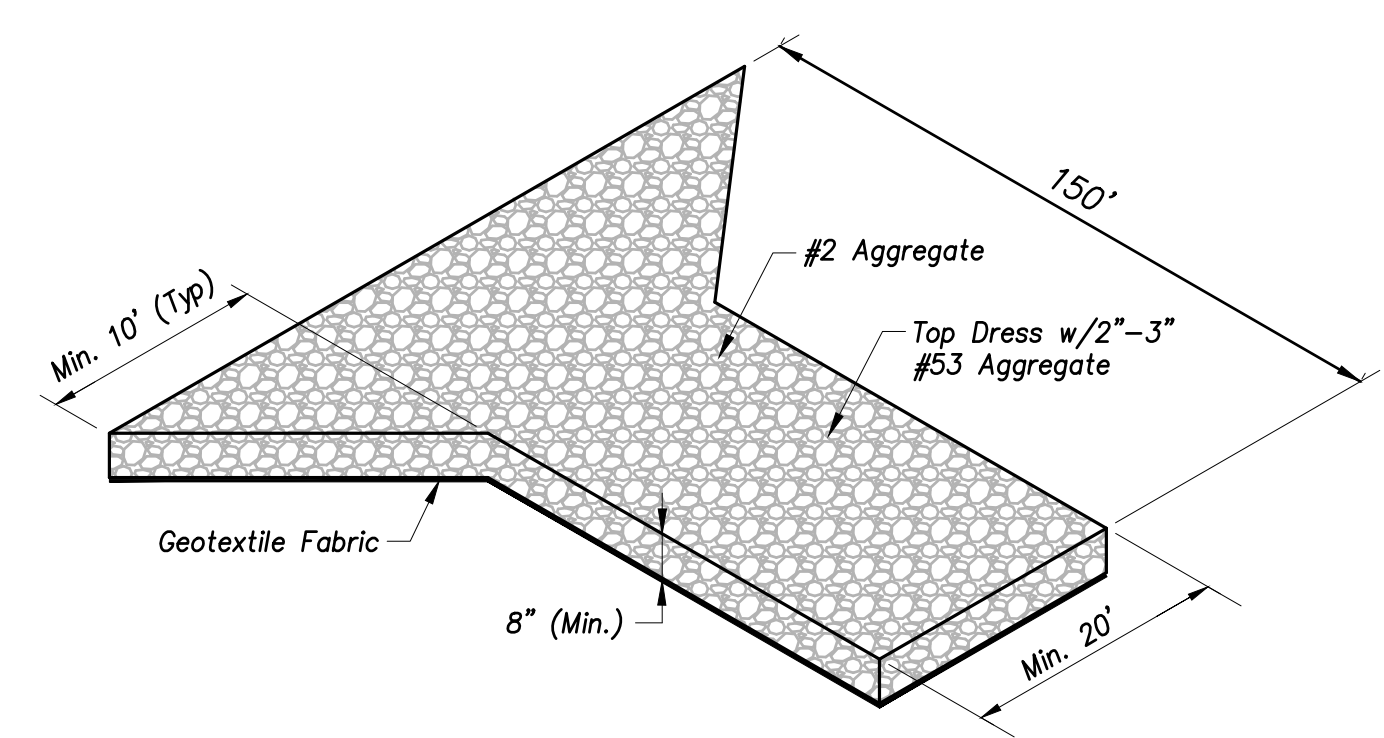
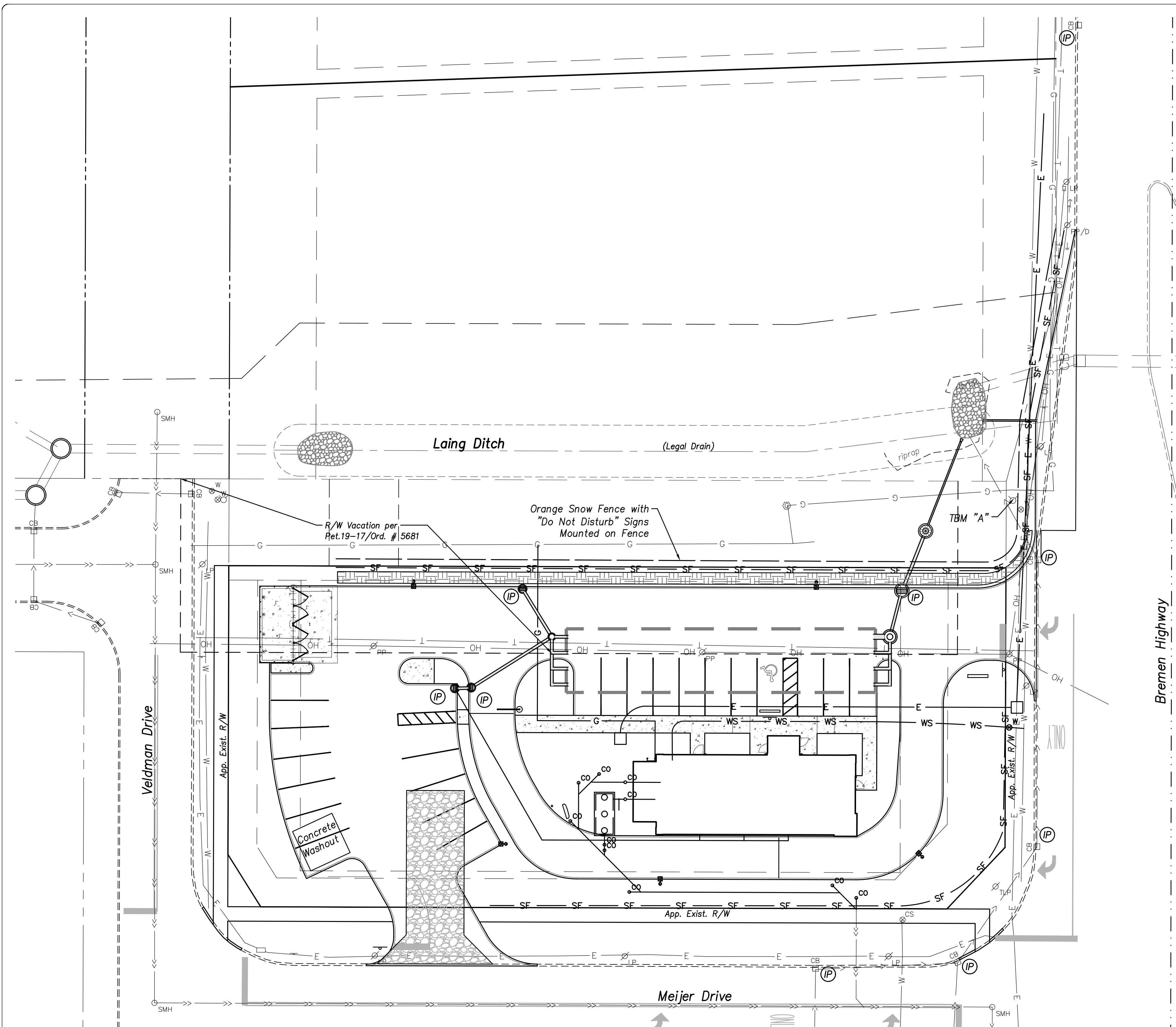
RIGID PIPE BEDDING DETAIL "A"
Not to Scale



FLEXIBLE PIPE BEDDING DETAIL "B"
Not to Scale

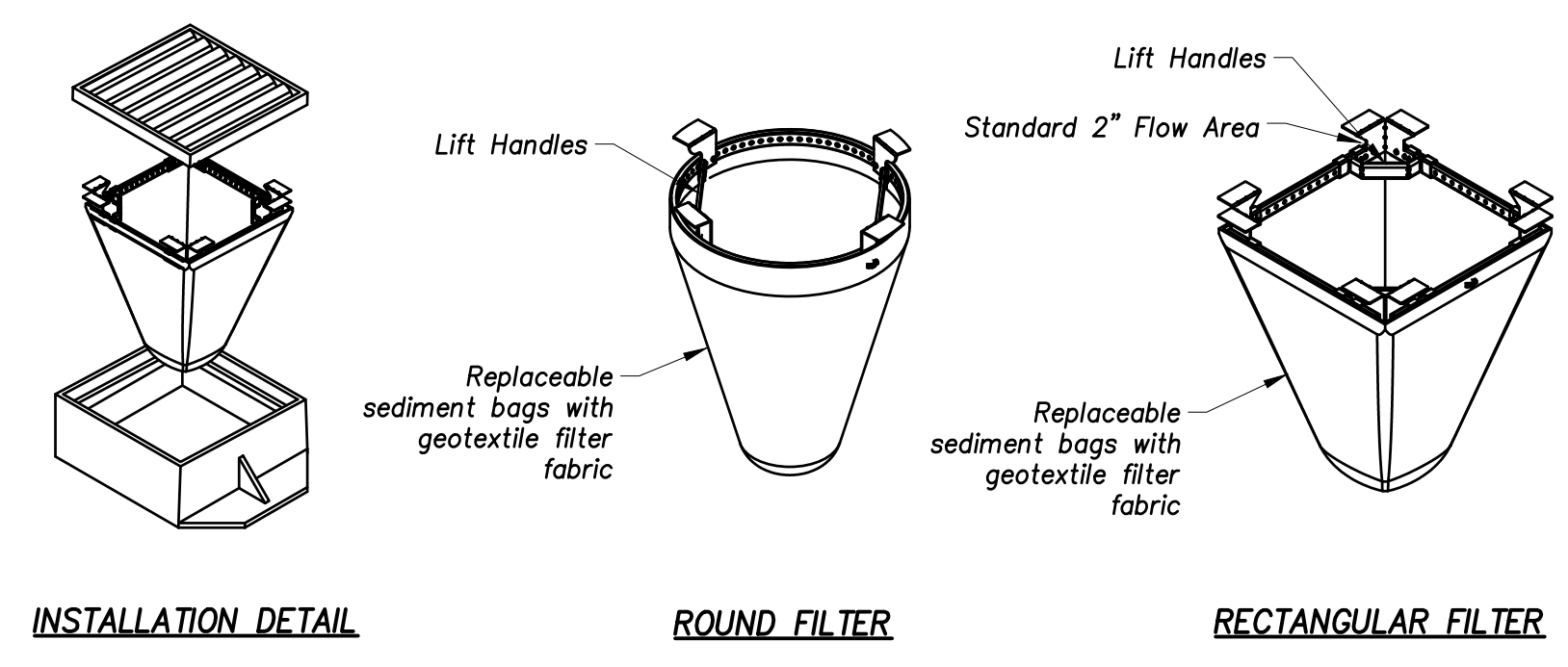


TWO-WAY CLEAN-OUT
(NOT TO SCALE)



- INSTALLATION**
1. Remove all vegetation and other objectionable material from the foundation area.
 2. Grade foundation and crown for positive drainage. If the slope of the construction entrance is toward a public road and exceeds two percent, construct an 8-inch high diversion ridge with a ratio of 3-to-1 side slopes across the foundation area about 15 feet from the entrance to divert runoff away from the road.
 3. Install a culvert pipe under the pad if needed to maintain proper public road drainage.
 4. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.
 5. Place specified aggregate to the dimensions shown leaving the surface smooth and sloped for drainage.
 6. Top-dress the first 50 feet adjacent to the public roadway with 2-3 inches of washed #53 aggregate [optional, used primarily where the purpose of the pad is keep soil from adhering to vehicle tires]
 7. Where possible, divert all storm water runoff and drainage from the pad to a sediment trap or basin.
- MAINTENANCE**
1. Inspect daily.
 2. Reshape pad as needed for drainage and runoff control.
 3. Top dress with clean aggregate as needed.
 4. Immediately remove mud and sediment tracked or washed onto public roads.
 5. Flushing should only be used if the water can be conveyed into a sediment trap or basin

Temporary Construction Entrance
(Not to Scale)



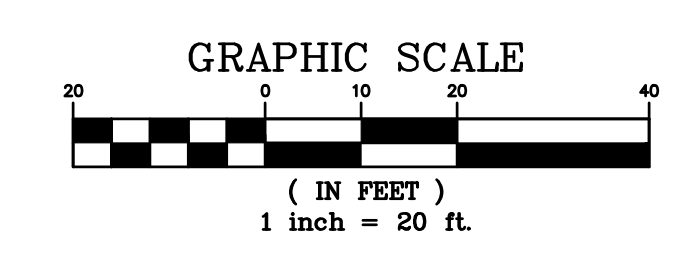
- INSTALLATION**
1. Prior to installation, Contractor shall submit brand and model information to Owner for approval prior to installation. Install per manufacturer recommendations.
 2. Remove grate and clean ledge of the casting frame or drainage structure.
 3. Drop frame and sediment bag insert onto load bearing lip of casting or concrete structure
 4. Re-install grate and confirm it is elevated no more than thickness of insert hangers.
- MAINTENANCE**
1. Inspection should occur at least once a week and following each 1/2" or more rain event.
 2. Empty the sediment bag if more than half filled with sediment and debris.
 3. Remove the grate, engage the lifting bars or handles and lift from the drainage structure, and dispose of any sediment or debris in accordance with EPA Guidelines.
 4. Remove any caked on silt from the sediment bag and reverse flush the bag with medium spray for optimal filtration.
 5. Replace the bag if torn or punctured to 1/2" diameter or greater on the lower half of the bag.
 6. When the contributing drainage area within 50 feet upstream of the inlet has been stabilized, remove insert (basket) and properly dispose of sediment deposits.

Temporary Inlet Protection
(Not to Scale)

- Notes**
1. Any storm sewer inlets in or adjacent to the construction limits shall be protected as specified on the plan or an approved equal. The intent of this measure is to prevent sediment from entering any drainage systems.
 2. Until the project is accepted by the Owner, the Contractor shall maintain all erosion control measures to prevent sediment from entering any public or private storm sewers and from leaving the project site. Contractor shall implement and maintain any additional measures at the request of the Local and/or State Storm Water and Erosion Control Inspectors at no additional cost.
 3. Silt Fencing – Tentative location shown on plan. Actual field conditions shall indicate the location and amount of silt fencing required to prevent sediment from entering public and private storm sewers and from leaving the project site. Silt fencing or other appropriate sediment barrier shall be installed a minimum of 10' away from the toe of slope stockpile, borrow, and/or disposal areas.
NO OFFSITE SEDIMENT FLOWS OR SEDIMENT LADEN STORMWATER FLOWS ARE TO OCCUR AT ANY TIME. INSTALL SILT FENCING ON AN AS NEEDED BASIS.
 4. Locations for concrete washout and temporary construction staging shall be determined by the Contractor and Owner prior to construction.
 5. All areas disturbed by construction shall be stabilized with seeding or an alternative surface stabilization measure. Temporary Seeding shall take place as soon as possible on any bare or thinly vegetated areas which have less than 70 percent cover and will remain inactive for a period of 15 days or more.

EROSION CONTROL LEGEND

- Erosion Control Blankets
- Silt Fence
- Inlet Protection



2	UPDATE ADDRESS	DEF	8/10/20
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 abonmarche.com
 COMPANY # 2011-ABONMARCHÉ CONSULTANTS, INC.
 Engineering - Architecture - Land Surveying

TACO BELL
3615 BREMEN HIGHWAY
MISHAWAKA, INDIANA

EROSION CONTROL PLAN

SHEET TITLE: EROSION CONTROL PLAN

DRAWN BY: DEF

DESIGNED BY: DEF

PM REVIEW: MJH

QA/QC REVIEW: RTN

DATE: 3-25-2020

SEAL: REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA No. 60016991

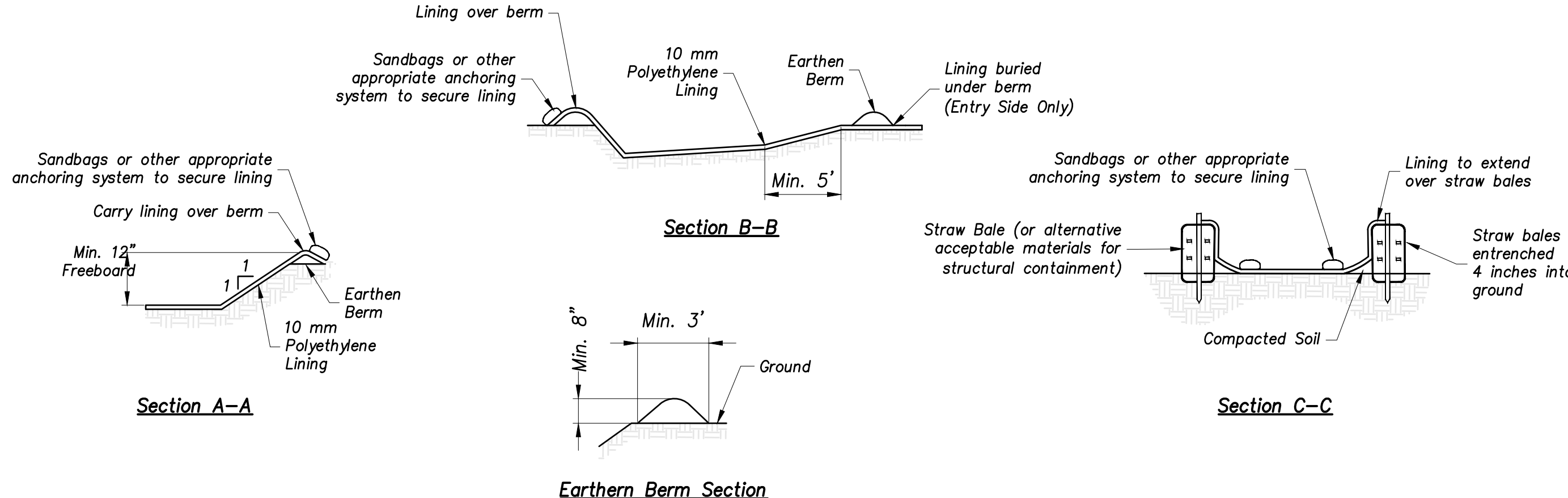
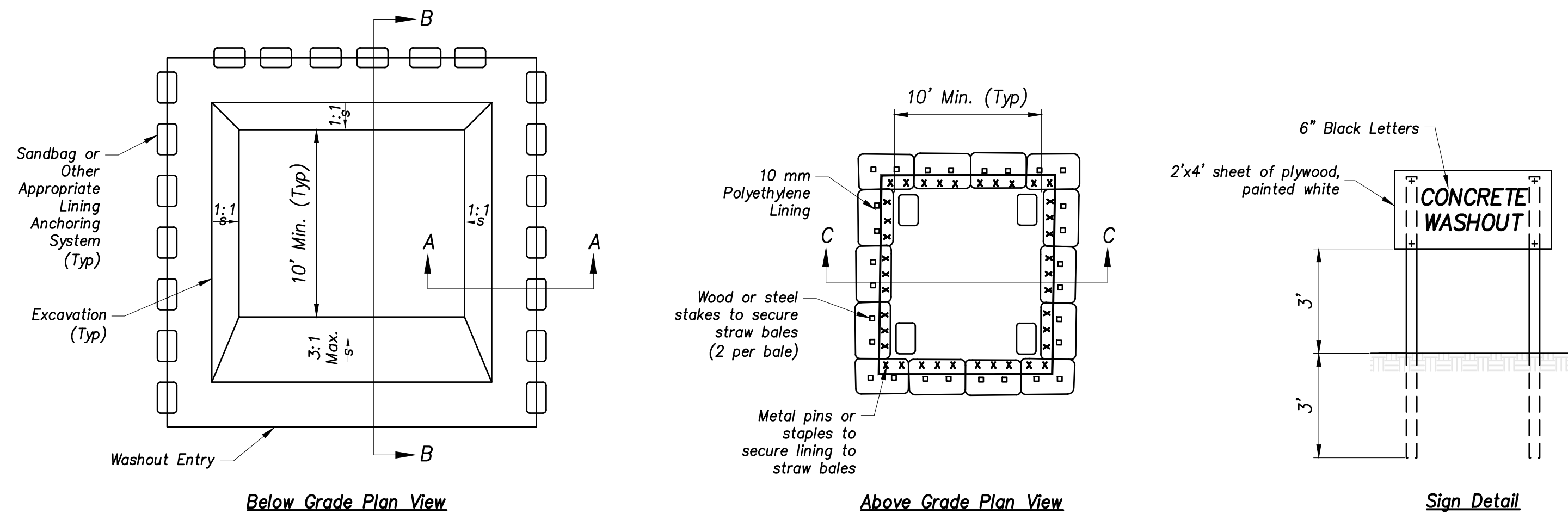
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DATE: 7-1-2020

SCALE: HORIZ: 1" = 20' VERT: [Blank]

ACI JOB #: 20-0205

SHEET NO. C9.0



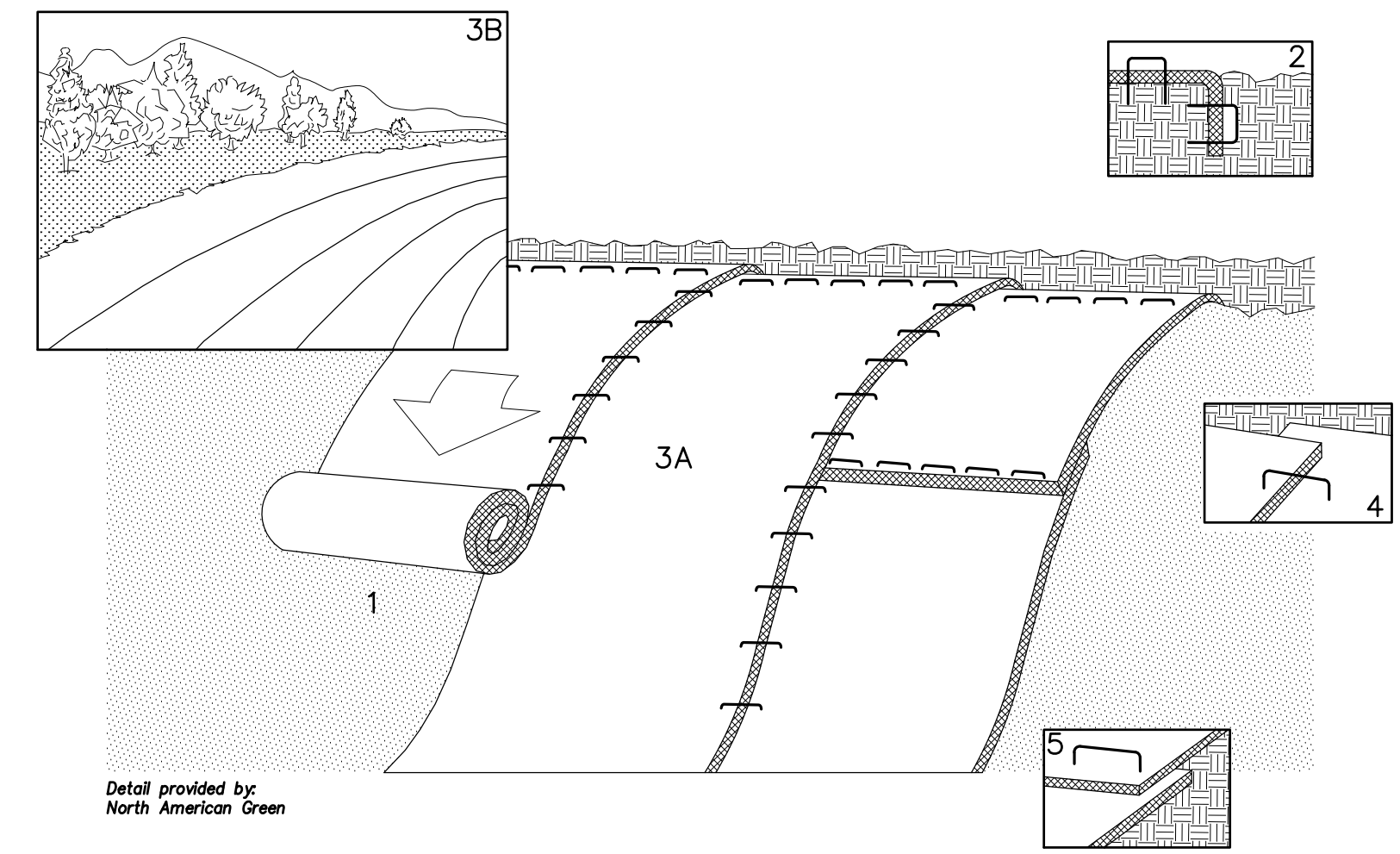
Installation

1. Dependent upon the type of system, either excavate the pit or install the containment system. For prefabricated containers, locate, and install according to the manufacturer's recommendations.
2. A base shall be constructed and prepared that is free of rocks and other debris that may cause tears/punctures in the polyethylene lining.
3. Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.
4. Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
5. Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
6. Install signage that identifies concrete washout areas and post signs directing contractors and suppliers to designated locations.
7. Where necessary, provide stable ingress and egress or alternative approach pad for concrete washout systems.

Maintenance

1. Inspect daily and after each storm event – inspect the integrity of the overall structure and containment system where applicable.
2. Inspect the system for leaks, spills, and tracking of soil by equipment, and the polyethylene lining for failure, including tears and punctures.
3. Once concrete wastes harden, remove and dispose of the material.
4. Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this this criterion, unless the manufacturer has alternate specifications.
5. Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
6. Dispose of all the concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
7. The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
8. The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
9. Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their national pollutant discharge elimination system permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
10. Prefabricated units are often pumped and the company supplying the unit provides this service.
11. Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify violators and take appropriate action.
12. When concrete washout systems are no longer required, the concrete washout system shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
13. Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

Concrete Washout Structure
(Not to Scale)



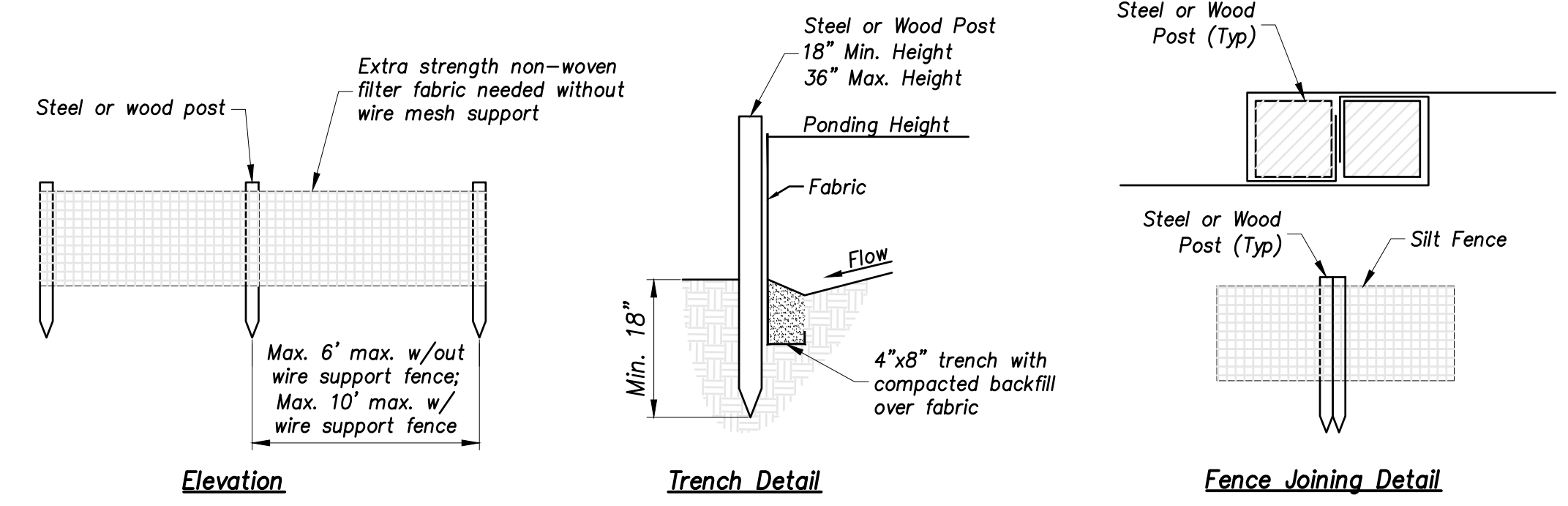
Installation

1. Prepare soil before installing blankets, including application of lime, fertilizer, and seed. When using cell-o-seed do not seed prepared area. Cell-o-seed must be installed with paper side down.
2. Begin at the top of the slope by anchoring the blanket in 6" deep x 6" wide trench. Backfill and compact the trench after stapling. Follow the manufacturer's recommendations for size and type of staples and staple pattern for securing the blankets.
3. A) Roll the blankets down the bank as shown.
B) Blankets may be installed horizontally down the slope of the drainage swale.
4. The edges of parallel blankets must be stapled with approximately 2" overlap.
5. When blankets must be spliced down the slope, place blanket end over end (shingle style) with approximately 4" overlap. Staple through overlapped area, approximately 12" apart.

Maintenance Guidelines

1. Inspect within 24 hours of a half-inch or greater rain event and at least once every week.
2. Check for erosion or displacement of the blanket.
3. If any area shows erosion, pull back that portion of the blanket covering the eroded area, add soil and tamp, reseed area, replace and staple the blanket.

Erosion Control Blanket Slope Stabilization
(Not to Scale)



Installation

1. Lay out the location of the fence so that it is parallel to the contour of the slope and at least 10 feet beyond the toe of the slope to provide a sediment storage area. Turn the ends of the fence up slope such that the point of contact between the ground and the bottom of the fence and terminates at a higher elevation than the top of the fence at its lowest point.
2. Excavate an 8-inch deep by 4-inch wide trench along the entire length of the fence. (installation by plowing is acceptable)
3. Install silt fence with the filter fabric located on the up-slope side of the excavated trench and the support posts on the down-slope side of the trench.
4. Drive the support posts at least 18 inches into the ground, tightly stretching the fabric between the posts as each is driven into the soil. A minimum of 12 inches of the filter fabric should extend into the trench.
5. Lay the lower 4 inches of fabric on the bottom of the trench and extend it toward the up-slope side of the trench.
6. Backfill the trench with soil material and compact it in place.
7. If the silt fence is being constructed onsite, attach the filter fabric to the support posts and attach wooden lathe to secure the fabric to the posts. Allow for at least 12 inches of fabric below ground level. Complete the silt fence installation, following steps 1 through 6 above.

Maintenance

1. Inspect within 24 hours of a half-inch or greater rain event and at least once every week.
2. If fence fabric tears or starts to decompose, or in any way becomes ineffective, replace the section immediately in accordance with installation specifications above.
3. Remove deposited sediment when it causes filter fabric to bulge or when it reaches 1/2 the height of the fence at its lowest point.
4. When the contributing drainage area has been stabilized, remove the fence and sediment deposits, grade the site to blend with the surrounding area and stabilize.

Temporary Silt Fence
(Not to Scale)

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