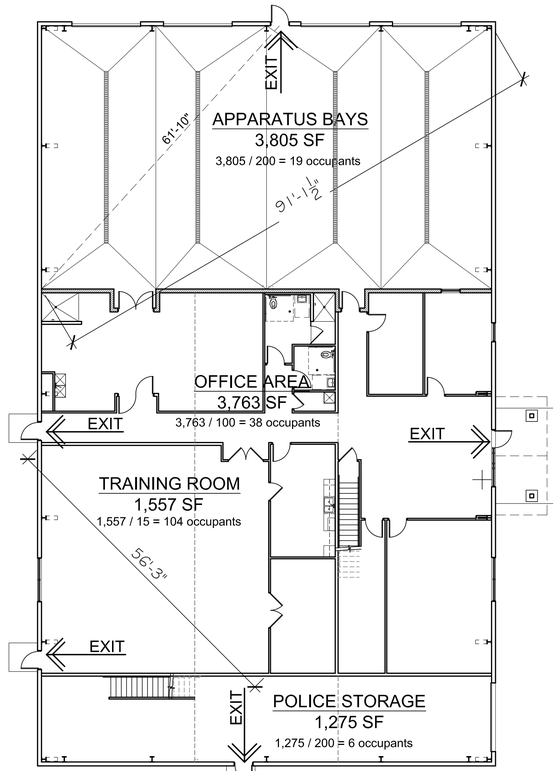


LIFE SAFETY PLAN

N.T.S.

PLAN NORTH

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL
LONG BEACH, INDIANA

30% DRAWING SET
NOT FOR CONSTRUCTION

30% DRAWING SET INDEX

PROJECT DESCRIPTION

THE SCOPE OF WORK FOR THIS PROJECT CONSISTS OF DEMOLISHING AN EXISTING FIRE STATION AND BUILDING A NEW 10,400 SF FIRE DEPARTMENT BUILDING WITH A 1,980 SF STORAGE MEZZANINE.

GENERAL NOTES

1. ALL WORK IS TO BE COMPLETED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS AND STANDARDS, INCLUDING, BUT NOT LIMITED TO THE INTERNATIONAL BUILDING CODE W/ INDIANA AMENDMENTS, THE INDIANA ENERGY CODE, THE INDIANA PLUMBING, MECHANICAL AND ELECTRICAL CODES, THE INDIANA FIRE CODE,THE AMERICANS WITH DISABILITIES ACT (ADA) AND APPLICABLE TRADE STANDARDS. ALL APPLICABLE RULES AND REGULATIONS ARE TO BE THE MOST CURRENT ADOPTED EDITION. ALL APPLICABLE CONTRACTORS SHALL BEAR ALL COSTS IN CORRECTING ANY NON-COMPLIANCE WITH THE REQUIREMENTS OF APPLICABLE CODES.
2. ALL MATERIALS, FINISHES AND INSTALLED PRODUCTS MUST COMPLY WITH THE REQUIRED SMOKE DEVELOPMENT AND ALLOWABLE FLAME SPREAD RATES PER GOVERNING CODE PROVISIONS. NO LEAD BASED PAINTS, ASBESTOS REINFORCED PRODUCTS OR SIMILAR KNOWN HEALTH HAZZARD PRODUCTS OR FINISHES MAY BE USED.
3. ALL H.V.A.C., PLUMBING, ELECTRICAL AND FIRE PROTECTION SYSTEMS ARE TO BE DESIGNED AND CONSTRUCTED BY THE RESPECTIVE CONTRACTORS ACCORDING TO CRITERIA DEFINED BY THE TENANT AND THE ARCHITECT. EACH RESPECTIVE CONTRACTOR WILL BEAR FULL RESPONSIBILITY FOR ALL DESIGN, PERFORMANCE, INSTALLATION AND INTER-SYSTEM COORDINATION.
4. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR INFORMATION ON EACH RESPECTIVE SYSTEM.
5. CONTRACTORS ARE REQUIRED TO COORDINATE THEIR RESPECTIVE WORK WITH ALL OTHER DISCIPLINES TO AVOID ANY CONFLICTS DURING CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE ARCHITECTURAL DRAWINGS WITH ALL OTHER CONSTRUCTION DOCUMENTS.
6. CONTRACTORS ARE REQUIRED TO VERIFY EXISTING CONDITIONS PRIOR TO ANY FABRICATION OR CONSTRUCTION. IF EXISTING CONDITIONS ARE DIFFERENT THAN SHOWN, NOTIFY A/E IMMEDIATELY.

CODE SUMMARY

APPLICABLE CODES:
- **2014 INDIANA BUILDING CODE** 2012 INTERNATIONAL BUILDING CODE W/ INDIANA AMENDMENTS
- **2012 INDIANA PLUMBING CODE** 2006 INTERNATIONAL PLUMBING CODE W/ INDIANA AMENDMENTS
- **2009 INDIANA ELECTRIC CODE** 2008 NATIONAL ELECTRIC CODE W/ INDIANA AMENDMENTS
- **2014 INDIANA FIRE CODE** 2012 INTERNATIONAL FIRE CODE W/ INDIANA AMENDMENTS
- **2014 INDIANA MECHANICAL CODE** 2012 INTERNATIONAL MECHANICAL CODE W/ INDIANA AMENDMENTS
- **2010 INDIANA ENERGY CONSERVATION CODE** ASHRAE 90.1, 2007 EDITION, W/ INDIANA AMENDMENTS
- **INDIANA HANDICAPPED ACCESSIBILITY CODE** 2003 ANSI A117.1 ADA ACCESSIBILITY GUIDELINES

OCCUPANCY: GROUP S-1 & GROUP B

CONSTRUCTION: TYPE II-B & TYPE V-B

SPRINKLERED: NONE

STORIES: SINGLE STORY + MEZZANINE

BUILDING AREA: 10,400 S.F. TOTAL (4,880 S.F. GARAGE & 5,520 S.F. OFFICE AREA)

OWNER INFO

TOWN OF LONG BEACH
2400 ORIOLE TRAIL
LONG BEACH, IN 43625

SITE ENGINEER INFO

HAAS & ASSOCIATES, LLC
526 FRANKLIN SQUARE
MICHIGAN CITY, INDIANA 46360

CONTACT: TIM HAAS
EMAIL: TIMJH@HAASLLC.COM
PHONE: (219) 872-9407
FAX: (219) 872-9489

ARCHITECT INFO

HOLLADAY PROPERTIES
6370 AMERIPLEX DRIVE, SUITE 110
PORTAGE, INDIANA 46368

CONTACT: LAURA SMALL
EMAIL: LSMALL@HOLLADAYPROPERTIES.COM
PHONE: (219) 841-6416
FAX: (219) 764-0446

GENERAL CONTRACTOR INFO

HOLLADAY CONSTRUCTION GROUP
6370 AMERIPLEX DRIVE, SUITE 110
PORTAGE, INDIANA 46368

CONTACT: CLAYTON TRUEBLOOD
EMAIL: CTRUEBLOOD@HCGLLC.NET
PHONE: (219) 841-6387
FAX: (219) 764-0446

HOLLADAY PROPERTIES
www.holladayproperties.com
6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

PROJECT NAME

LONG BEACH FIRE DEPARTMENT
2400 ORIOLE TRAIL
LONG BEACH, IN

REVISIONS

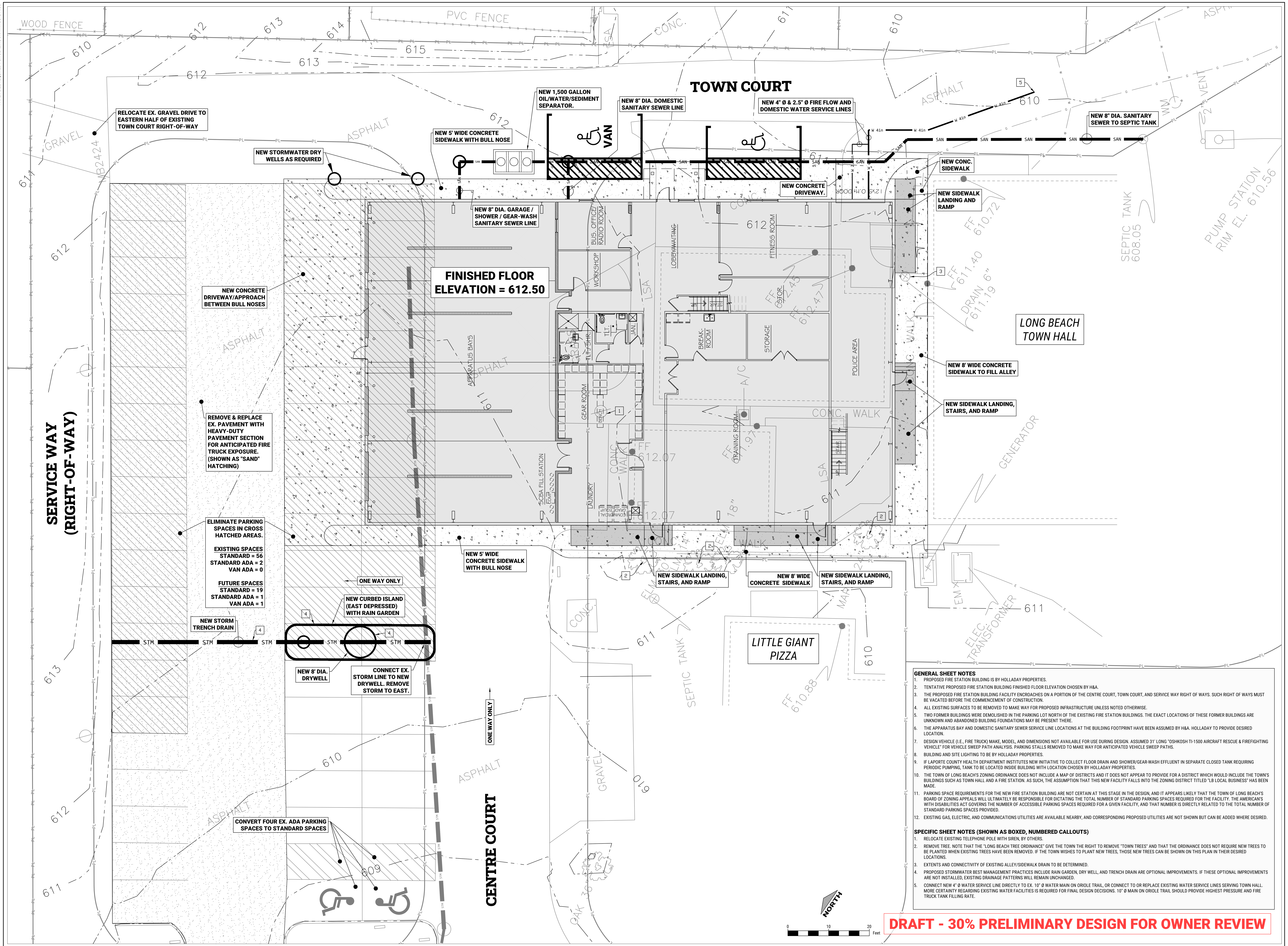
11/11/22	**30% FLOOR PLAN**
11/30/22	**30% DEVELOPMENT SET**

DATE: **11/30/2022**

DRAWN BY: **LAS**

SHEET TITLE: **COVER SHEET & LIFE SAFETY PLAN**

SHEET NO.: **CS**



GENERAL SHEET NOTES

1. PROPOSED FIRE STATION BUILDING IS BY HOLLADAY PROPERTIES.
2. TENTATIVE PROPOSED FIRE STATION BUILDING FINISHED FLOOR ELEVATION CHOSEN BY H&A.
3. THE PROPOSED FIRE STATION BUILDING FACILITY ENCROACHES ON A PORTION OF THE CENTRE COURT, TOWN COURT, AND SERVICE WAY RIGHT OF WAYS. SUCH RIGHT OF WAYS MUST BE VACATED BEFORE THE COMMENCEMENT OF CONSTRUCTION.
4. ALL EXISTING SURFACES TO BE REMOVED TO MAKE WAY FOR PROPOSED INFRASTRUCTURE UNLESS NOTED OTHERWISE.
5. TWO FORMER BUILDINGS WERE DEMOLISHED IN THE PARKING LOT NORTH OF THE EXISTING FIRE STATION BUILDINGS. THE EXACT LOCATIONS OF THESE FORMER BUILDINGS ARE UNKNOWN AND ABANDONED BUILDING FOUNDATIONS MAY BE PRESENT THERE.
6. THE APPARATUS BAY AND DOMESTIC SANITARY SEWER SERVICE LINE LOCATIONS AT THE BUILDING FOOTPRINT HAVE BEEN ASSUMED BY H&A. HOLLADAY TO PROVIDE DESIRED LOCATION.
7. DESIGN VEHICLE (I.E., FIRE TRUCK) MAKE, MODEL, AND DIMENSIONS NOT AVAILABLE FOR USE DURING DESIGN. ASSUMED 31' LONG "OSHKOSH TI-1500 AIRCRAFT RESCUE & FIREFIGHTING VEHICLE" FOR VEHICLE SWEEP PATH ANALYSIS. PARKING STALLS REMOVED TO MAKE WAY FOR ANTICIPATED VEHICLE SWEEP PATHS.
8. BUILDING AND SITE LIGHTING TO BE BY HOLLADAY PROPERTIES.
9. IF LAPORTE COUNTY HEALTH DEPARTMENT INSTITUTES NEW INITIATIVE TO COLLECT FLOOR DRAIN AND SHOWER/GEAR-WASH EFFLUENT IN SEPARATE CLOSED TANK REQUIRING PERIODIC PUMPING, TANK TO BE LOCATED INSIDE BUILDING WITH LOCATION CHOSEN BY HOLLADAY PROPERTIES.
10. THE TOWN OF LONG BEACH'S ZONING ORDINANCE DOES NOT INCLUDE A MAP OF DISTRICTS AND IT DOES NOT APPEAR TO PROVIDE FOR A DISTRICT WHICH WOULD INCLUDE THE TOWN'S BUILDINGS SUCH AS TOWN HALL AND A FIRE STATION. AS SUCH, THE ASSUMPTION THAT THIS NEW FACILITY FALLS INTO THE ZONING DISTRICT TITLED "LB LOCAL BUSINESS" HAS BEEN MADE.
11. PARKING SPACE REQUIREMENTS FOR THE NEW FIRE STATION BUILDING ARE NOT CERTAIN AT THIS STAGE IN THE DESIGN, AND IT APPEARS LIKELY THAT THE TOWN OF LONG BEACH'S BOARD OF ZONING APPEALS WILL ULTIMATELY BE RESPONSIBLE FOR DICTATING THE TOTAL NUMBER OF STANDARD PARKING SPACES REQUIRED FOR THE FACILITY. THE AMERICAN'S WITH DISABILITIES ACT GOVERNS THE NUMBER OF ACCESSIBLE PARKING SPACES REQUIRED FOR A GIVEN FACILITY, AND THAT NUMBER IS DIRECTLY RELATED TO THE TOTAL NUMBER OF STANDARD PARKING SPACES PROVIDED.
12. EXISTING GAS, ELECTRIC, AND COMMUNICATIONS UTILITIES ARE AVAILABLE NEARBY, AND CORRESPONDING PROPOSED UTILITIES ARE NOT SHOWN BUT CAN BE ADDED WHERE DESIRED.

SPECIFIC SHEET NOTES (SHOWN AS BOXED, NUMBERED CALLOUTS)

1. RELOCATE EXISTING TELEPHONE POLE WITH SIREN, BY OTHERS.
2. REMOVE TREE. NOTE THAT THE "LONG BEACH TREE ORDINANCE" GIVE THE TOWN THE RIGHT TO REMOVE "TOWN TREES" AND THAT THE ORDINANCE DOES NOT REQUIRE NEW TREES TO BE PLANTED WHEN EXISTING TREES HAVE BEEN REMOVED. IF THE TOWN WISHES TO PLANT NEW TREES, THOSE NEW TREES CAN BE SHOWN ON THIS PLAN IN THEIR DESIRED LOCATIONS.
3. EXTENTS AND CONNECTIVITY OF EXISTING ALLEY/SIDEWALK DRAIN TO BE DETERMINED.
4. PROPOSED STORMWATER BEST MANAGEMENT PRACTICES INCLUDE RAIN GARDEN, DRY WELL, AND TRENCH DRAIN ARE OPTIONAL IMPROVEMENTS. IF THESE OPTIONAL IMPROVEMENTS ARE NOT INSTALLED, EXISTING DRAINAGE PATTERNS WILL REMAIN UNCHANGED.
5. CONNECT NEW 4" Ø WATER SERVICE LINE DIRECTLY TO EX. 10" Ø WATER MAIN ON ORIOLE TRAIL, OR CONNECT TO OR REPLACE EXISTING WATER SERVICE LINES SERVING TOWN HALL. MORE CERTAINTY REGARDING EXISTING WATER FACILITIES IS REQUIRED FOR FINAL DESIGN DECISIONS. 10" Ø MAIN ON ORIOLE TRAIL SHOULD PROVIDE HIGHEST PRESSURE AND FIRE TRUCK TANK FILLING RATE.

DRAFT - 30% PRELIMINARY DESIGN FOR OWNER REVIEW

haas & associates
CONSULTING ENGINEERS
www.HaasLLC.com
526 Franklin Street
Michigan City, IN 46360
Phone: 219-872-9407

CERTIFICATION

DRAFT (NOT CERTIFIED)

PROJECT NAME, OWNER, & LOCATION

Long Beach Fire Station (2023)

Owner: Town Of Long Beach, Indiana

Location: 2400 Centre Court, Long Beach, IN 46360

REVISIONS

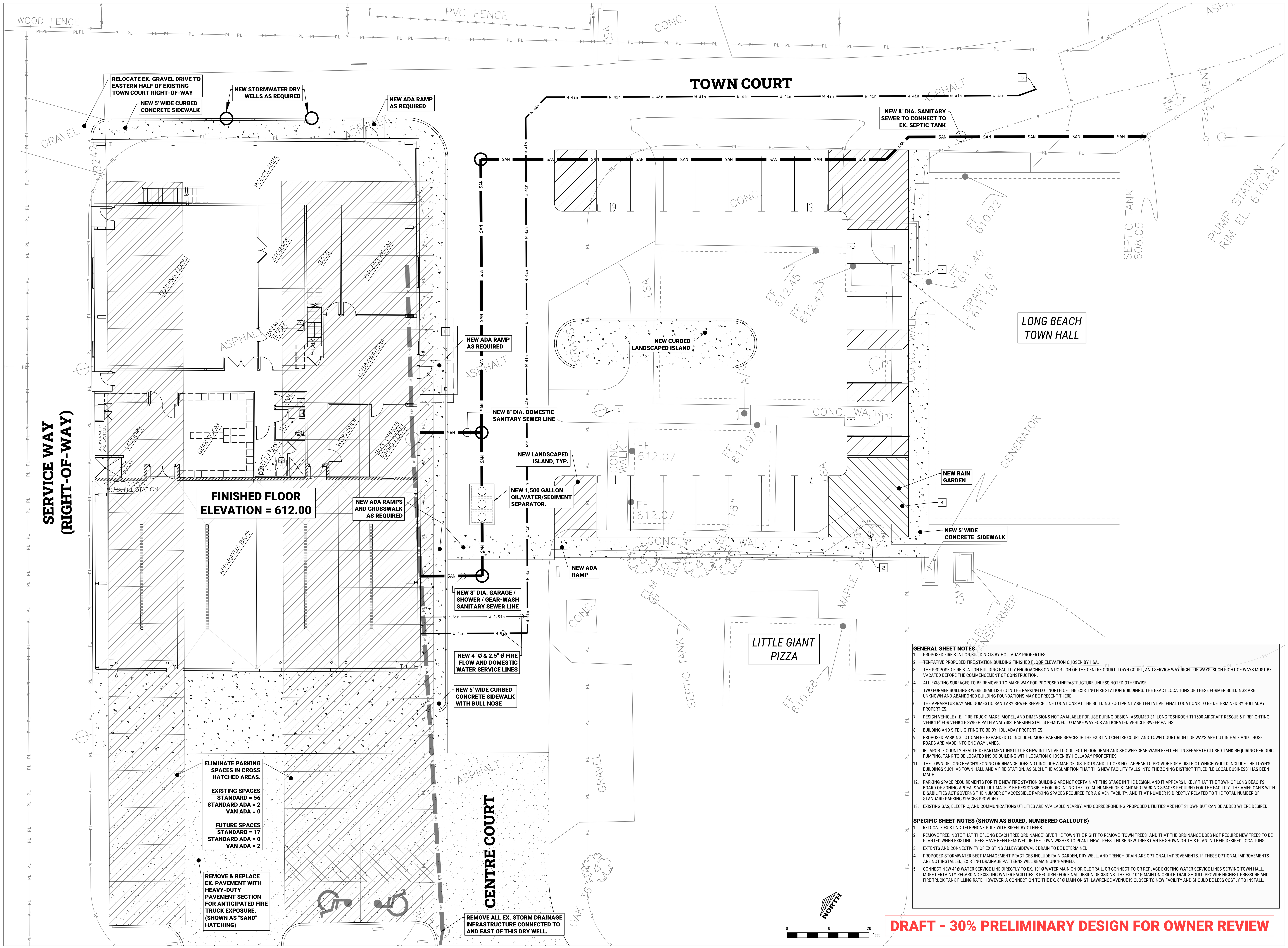
DATE ISSUED:	DRAWN BY
TBD (PLOTTED: 11.29.2022)	RPL

SHEET TITLE

PROPOSED CIVIL SITE PLAN

SHEET NO.

C-1.0



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7. DESIGN VEHICLE (I.E., FIRE TRUCK) MAKE, MODEL, AND DIMENSIONS NOT AVAILABLE FOR USE DURING DESIGN. ASSUMED 31' LONG "OSHKOSH TI-1500 AIRCRAFT RESCUE & FIREFIGHTING VEHICLE" FOR VEHICLE SWEEP PATH ANALYSIS. PARKING STALLS REMOVED TO MAKE WAY FOR ANTICIPATED VEHICLE SWEEP PATHS.
8. BUILDING AND SITE LIGHTING TO BE BY HOLLADAY PROPERTIES.
9. PROPOSED PARKING LOT CAN BE EXPANDED TO INCLUDED MORE PARKING SPACES IF THE EXISTING CENTRE COURT AND TOWN COURT RIGHT OF WAYS ARE CUT IN HALF AND THOSE ROADS ARE MADE INTO ONE WAY LANES.
10. IF LAPORTE COUNTY HEALTH DEPARTMENT INSTITUTES NEW INITIATIVE TO COLLECT FLOOR DRAIN AND SHOWER/GEAR-WASH EFFLUENT IN SEPARATE CLOSED TANK REQUIRING PERIODIC PUMPING, TANK TO BE LOCATED INSIDE BUILDING WITH LOCATION CHOSEN BY HOLLADAY PROPERTIES.
11. THE TOWN OF LONG BEACH'S ZONING ORDINANCE DOES NOT INCLUDE A MAP OF DISTRICTS AND IT DOES NOT APPEAR TO PROVIDE FOR A DISTRICT WHICH WOULD INCLUDE THE TOWN'S BUILDINGS SUCH AS TOWN HALL AND A FIRE STATION. AS SUCH, THE ASSUMPTION THAT THIS NEW FACILITY FALLS INTO THE ZONING DISTRICT TITLED "LB LOCAL BUSINESS" HAS BEEN MADE.
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13. EXISTING GAS, ELECTRIC, AND COMMUNICATIONS UTILITIES ARE AVAILABLE NEARBY, AND CORRESPONDING PROPOSED UTILITIES ARE NOT SHOWN BUT CAN BE ADDED WHERE DESIRED.

SPECIFIC SHEET NOTES (SHOWN AS BOXED, NUMBERED CALLOUTS)

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2. REMOVE TREE. NOTE THAT THE "LONG BEACH TREE ORDINANCE" GIVE THE TOWN THE RIGHT TO REMOVE "TOWN TREES" AND THAT THE ORDINANCE DOES NOT REQUIRE NEW TREES TO BE PLANTED WHEN EXISTING TREES HAVE BEEN REMOVED. IF THE TOWN WISHES TO PLANT NEW TREES, THOSE NEW TREES CAN BE SHOWN ON THIS PLAN IN THEIR DESIRED LOCATIONS.
3. EXTENTS AND CONNECTIVITY OF EXISTING ALLEY/SIDEWALK DRAIN TO BE DETERMINED.
4. PROPOSED STORMWATER BEST MANAGEMENT PRACTICES INCLUDE RAIN GARDEN, DRY WELL, AND TRENCH DRAIN ARE OPTIONAL IMPROVEMENTS. IF THESE OPTIONAL IMPROVEMENTS ARE NOT INSTALLED, EXISTING DRAINAGE PATTERNS WILL REMAIN UNCHANGED.
5. CONNECT NEW 4" Ø WATER SERVICE LINE DIRECTLY TO EX. 10" Ø WATER MAIN ON ORIOLE TRAIL, OR CONNECT TO OR REPLACE EXISTING WATER SERVICE LINES SERVING TOWN HALL. MORE CERTAINTY REGARDING EXISTING WATER FACILITIES IS REQUIRED FOR FINAL DESIGN DECISIONS. THE EX. 10" Ø MAIN ON ORIOLE TRAIL SHOULD PROVIDE HIGHEST PRESSURE AND FIRE TRUCK TANK FILLING RATE; HOWEVER, A CONNECTION TO THE EX. 6" Ø MAIN ON ST. LAWRENCE AVENUE IS CLOSER TO NEW FACILITY AND SHOULD BE LESS COSTLY TO INSTALL.

DRAFT - 30% PRELIMINARY DESIGN FOR OWNER REVIEW

Haas & Associates CONSULTING ENGINEERS
www.HaasLLC.com
526 Franklin Street
Michigan City, IN 46360
Phone: 219-872-9407

CERTIFICATION

DRAFT (NOT CERTIFIED)

PROJECT NAME, OWNER, & LOCATION

Long Beach Fire Station (2023)

Owner: Town Of Long Beach, Indiana

Location: 2400 Centre Court, Long Beach, IN 46360

REVISIONS

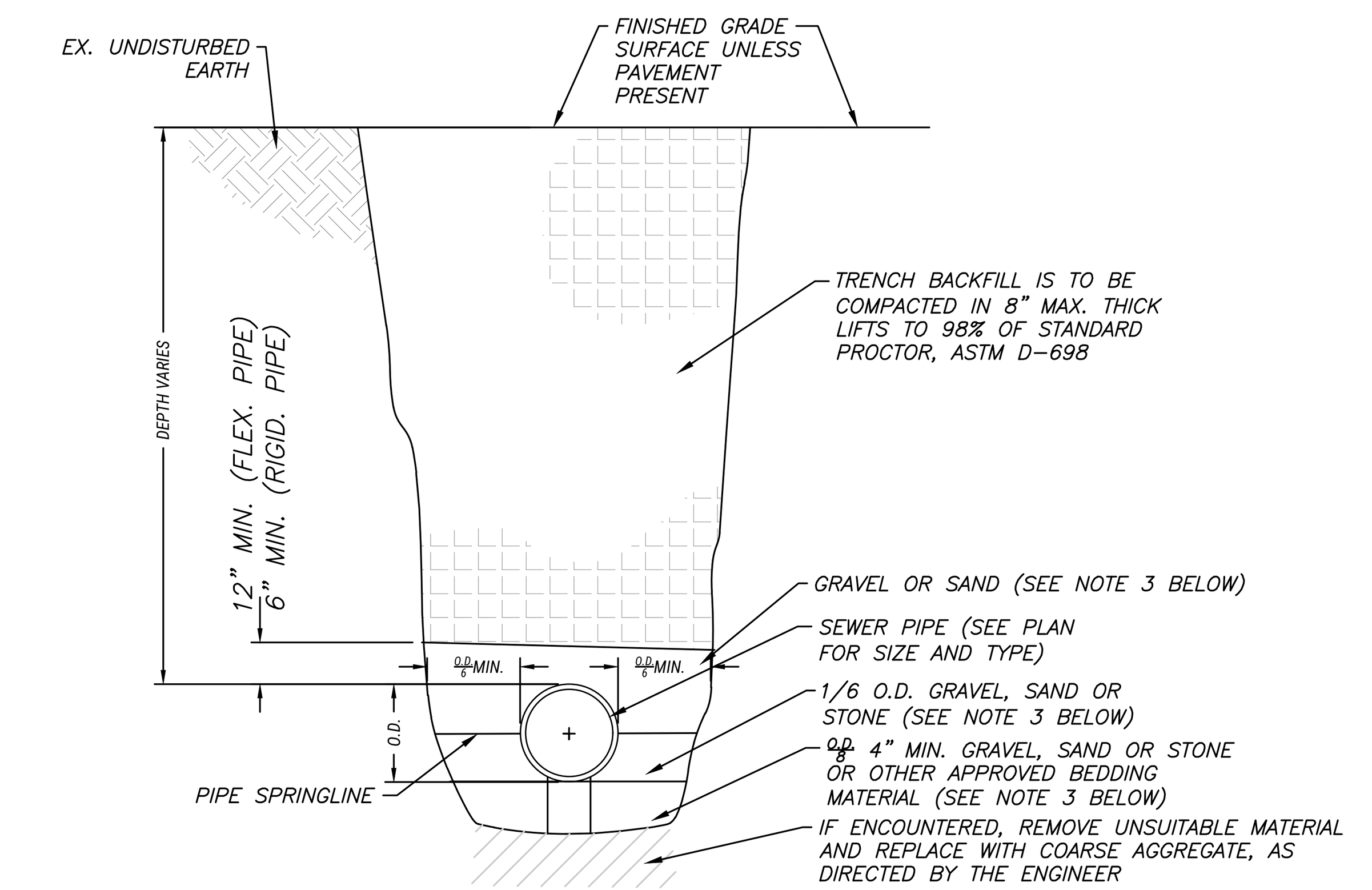
DATE ISSUED:	DRAWN BY
TBD (PLOTTED: 11.29.2022)	RPL

SHEET TITLE

PROPOSED CIVIL SITE PLAN - ALTERNATIVE BUILDING LOCATION

SHEET NO.

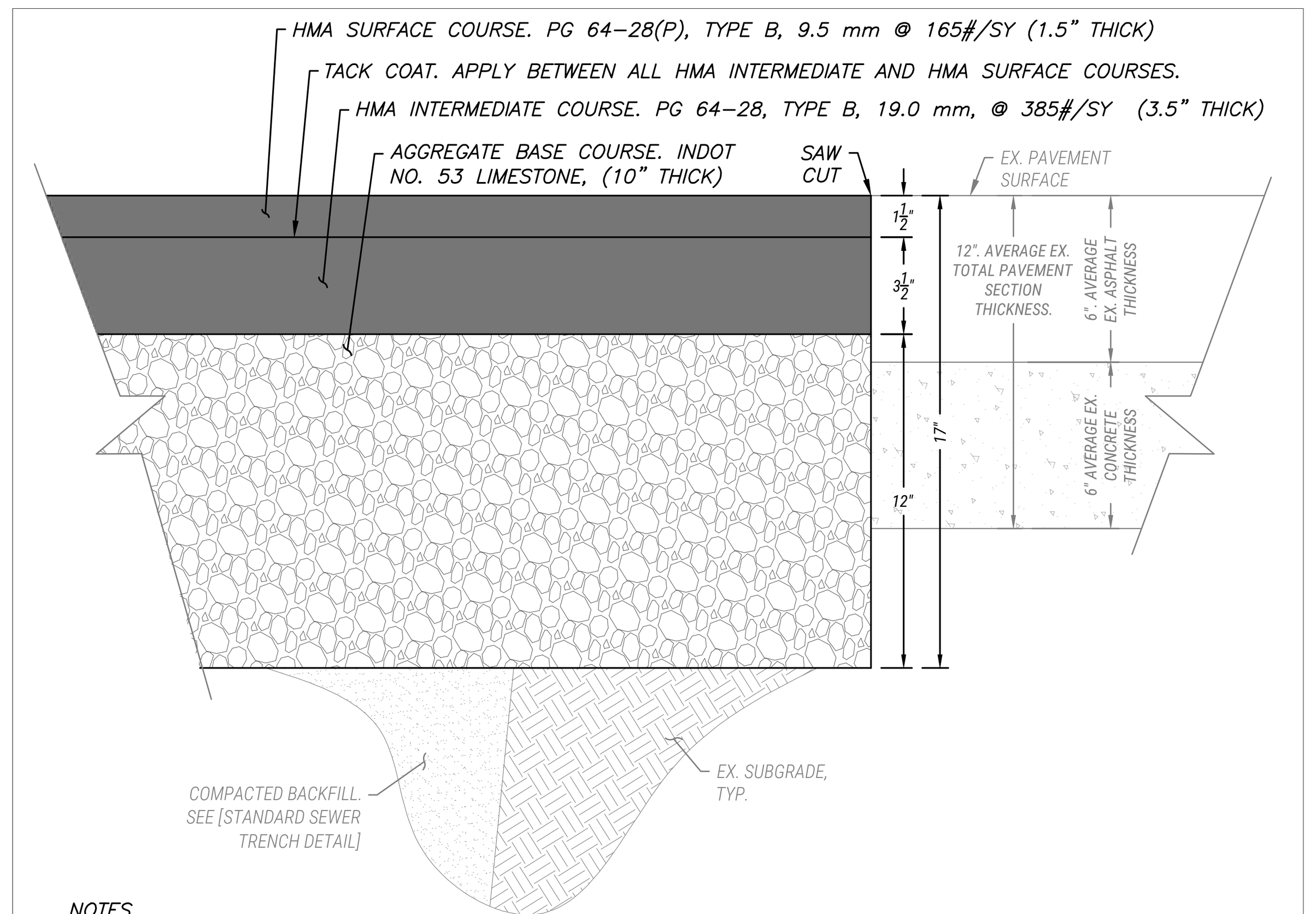
C-1.1



NOTES:
1. EXCAVATED MATERIALS (CLEAN SANDS AND CLEAN GRAVELS) MAY BE USED FOR PIPE BEDDING AND COMPACTED GRANULAR FILL WITH APPROVAL OF THE ENGINEER.
2. LIMESTONE ONLY, SLAG IS NOT PERMITTED AS BEDDING OR BACKFILL.
3. ALL BACKFILL MATERIALS TO BE COMPACTED TO 98% OF EACH MATERIALS' MAX. DENSITY PER ASTM D-698 UNLESS NOTED OTHERWISE.
4. CARE SHALL BE TAKEN TO PLACE, BACKFILL GENTLY SO AS NOT TO CRACK OR OTHERWISE DAMAGE SEWER PIPE.

STANDARD SEWER TRENCH DETAIL

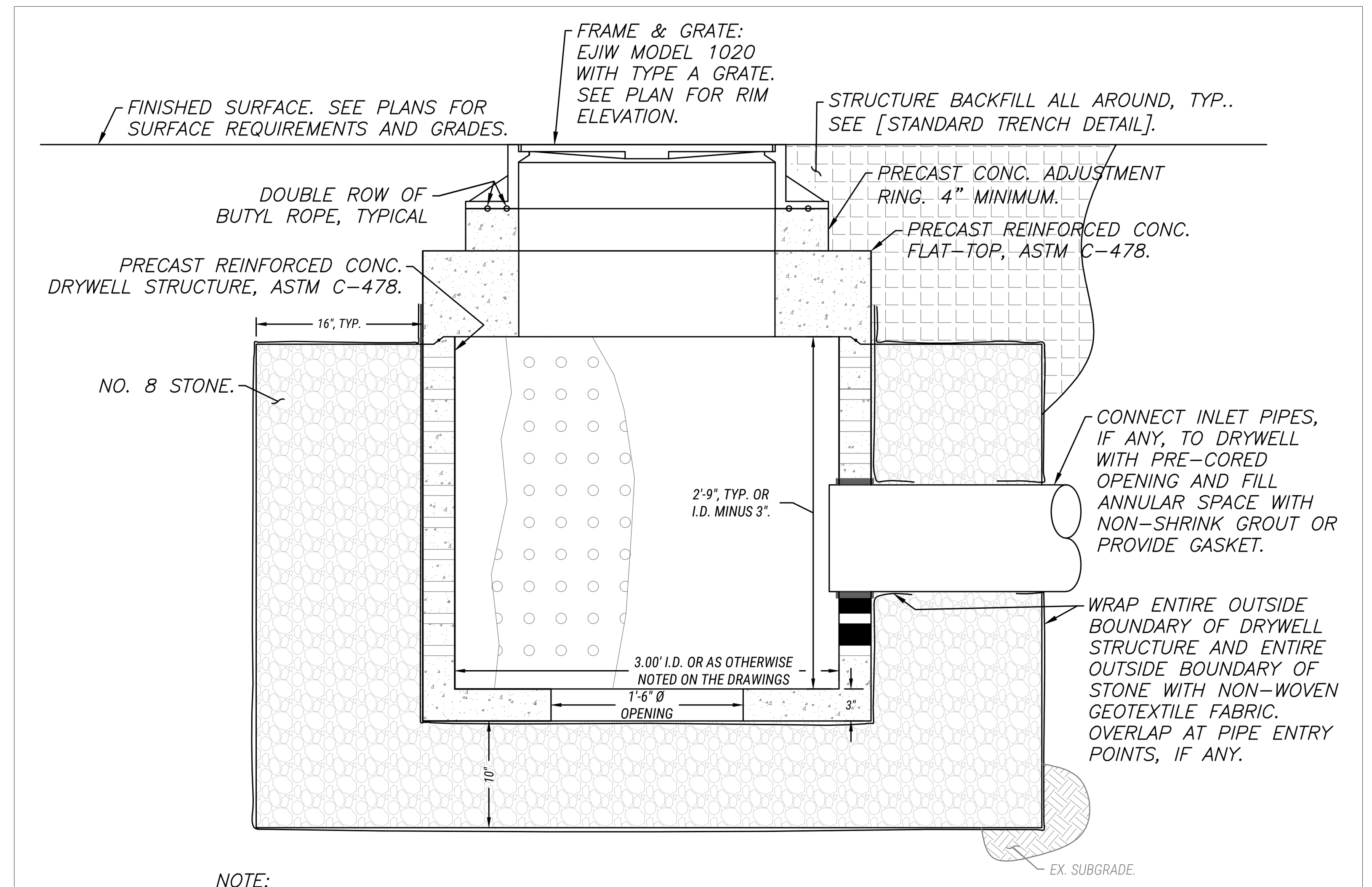
SCALE: NONE



NOTES
1. "(P)" IN SURFACE MIX DESIGNATION IS NOTATION FOR SBS POLYMER. SBS POLYMER IS A REQUIRED COMPONENT OF THE SURFACE MIX. SEE SPECIFICATIONS FOR MORE INFORMATION REGARDING SBS POLYMER MATERIAL AND TESTING.
2. EXISTING PAVEMENT SECTION SHOWN IS FOR LAKE SHORE DRIVE AND IS BASED ON AVERAGE THICKNESS VALUES COLLECTED AS PART OF THE GEOTECHNICAL INVESTIGATION FOR THE PROJECT. SEE GEOTECHNICAL INVESTIGATION REPORT IN ATTACHMENTS SECTION OF CONTRACT DOCUMENTS FOR SPECIFIC SOIL BORING AND PAVEMENT CORING LOGS.

ASPHALT PAVEMENT SECTION DETAIL

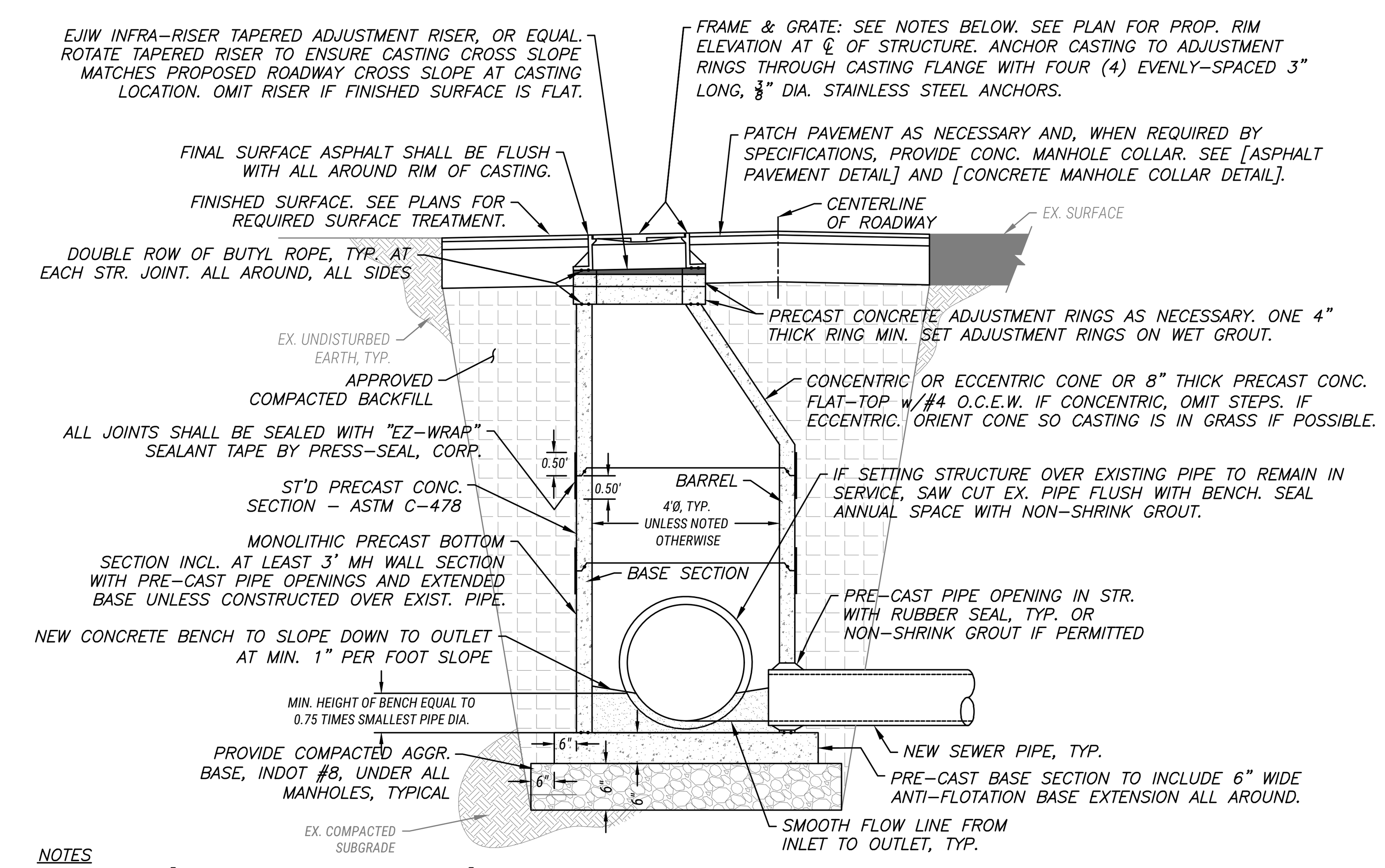
SCALE: 2" = 1'



NOTE:
1. THE CONTRACTOR SHALL CLEAR AND CLEAN ALL DRAIN HOLES PRIOR TO WRAPPING OF STRUCTURE WITH GEOTEXTILE FABRIC PRIOR TO INSTALLATION OF STRUCTURE

DRY WELL DETAIL

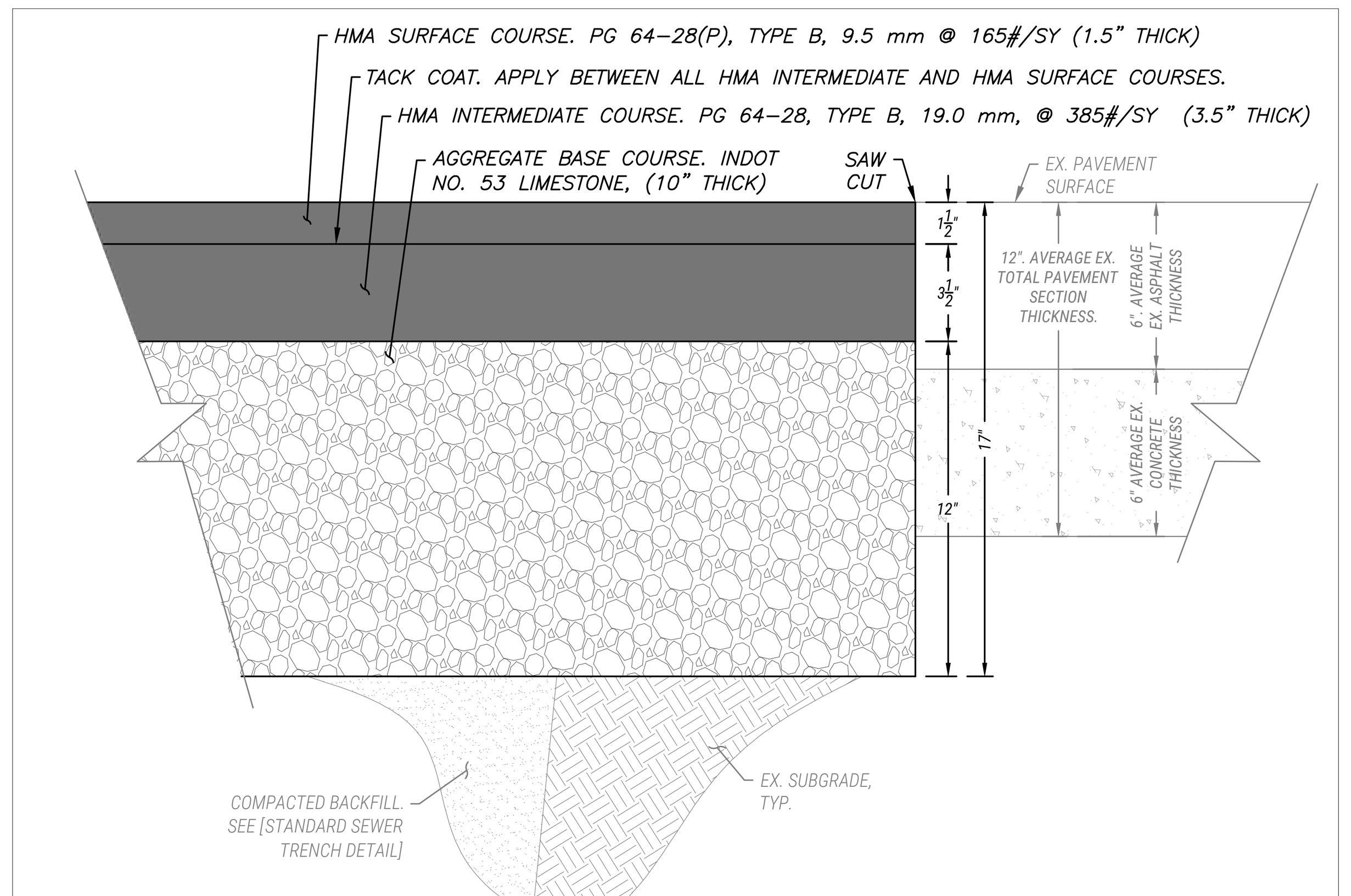
SCALE: 1" = 1'



NOTES
1. SEE ALSO [STANDARD SEWER TRENCH DETAIL] FOR ADDITIONAL TRENCHING AND SURFACE TREATMENT REQUIREMENTS.
2. SEE PLAN FOR PIPE INVERTS AND STRUCTURE ELEVATIONS.
3. CAST BASE IN PLACE IF NEW STR. IS OVER EX. SEWER PIPE TO REMAIN IN SERVICE.
4. ALL PIPE CONNECTIONS SHALL BE WATER-PROOF.
5. ALL 36"Ø & SMALLER PIPES SHALL BE CONNECTED TO STRUCTURE USING A RUBBER BOOT CONNECTOR SEAL THAT IS IN ACCORDANCE WITH ASTM C-923 AND THE SPECIFICATIONS. SEWERS LARGER THAN 36"Ø SHALL USE NON-SHRINK GROUT TO FILL THE ANNULAR SPACE.
6. MANHOLES SHALL NOT INCLUDE STEPS.
7. ALL STORM MANHOLES SHALL BE EJIW MODEL 1020 WITH TYPE A COVER UNLESS NOTED OTHERWISE. ALL SANITARY MANHOLES SHALL BE EJIW MODEL 1120 WITH TYPE A COVER AND "SANITARY SEWER" LETTERING, UNLESS NOTED OTHERWISE.
8. BENCH WALL HEIGHT TO BE EQUAL TO LARGEST PIPE DIAMETER FOR ALL SANITARY MANHOLES.

STANDARD MANHOLE DETAIL

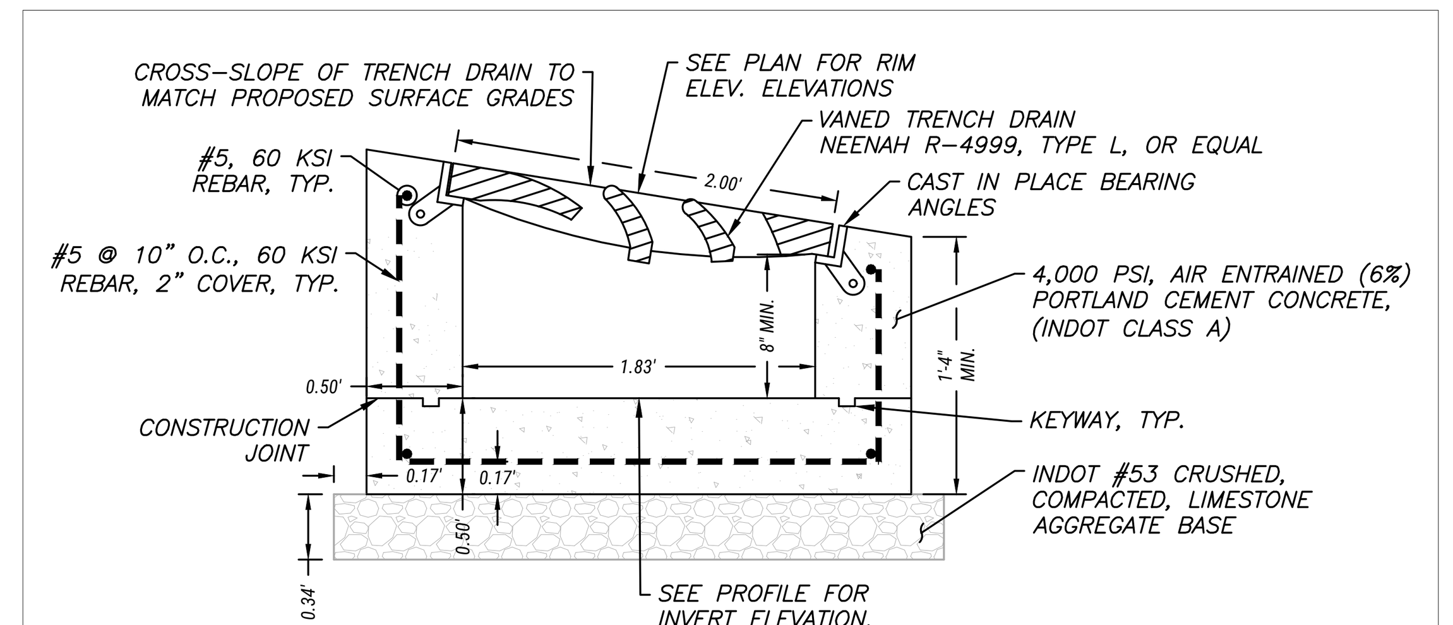
SCALE: 1"=3'



NOTES
1. "(P)" IN SURFACE MIX DESIGNATION IS NOTATION FOR SBS POLYMER. SBS POLYMER IS A REQUIRED COMPONENT OF THE SURFACE MIX. SEE SPECIFICATIONS FOR MORE INFORMATION REGARDING SBS POLYMER MATERIAL AND TESTING.
2. EXISTING PAVEMENT SECTION SHOWN IS FOR LAKE SHORE DRIVE AND IS BASED ON AVERAGE THICKNESS VALUES COLLECTED AS PART OF THE GEOTECHNICAL INVESTIGATION FOR THE PROJECT. SEE GEOTECHNICAL INVESTIGATION REPORT IN ATTACHMENTS SECTION OF CONTRACT DOCUMENTS FOR SPECIFIC SOIL BORING AND PAVEMENT CORING LOGS.

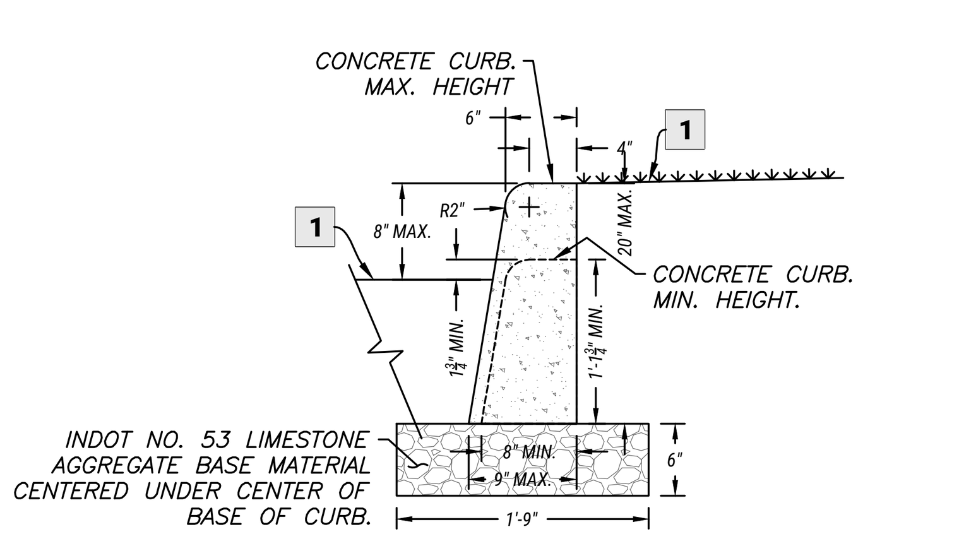
ASPHALT PAVEMENT SECTION DETAIL

SCALE: 2" = 1'



TRENCH DRAIN DETAIL

SCALE: 1" = 1'

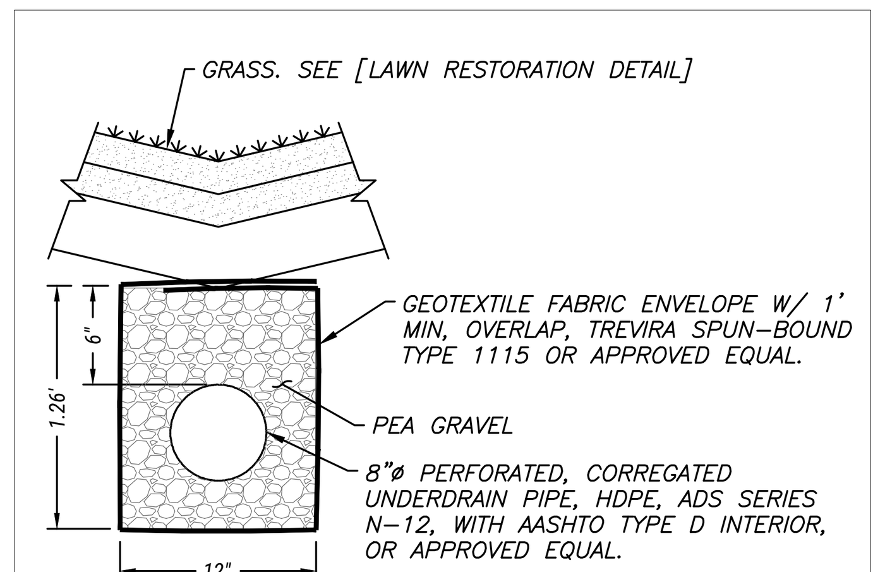


SPECIFIC NOTES (SHOWN IN BOXES)
1. EXIST MATERIAL REMOVED TO INSTALL CURB SHALL BE REPLACED PER THE NEAT LINE TRENCH LIMITS SHOWN ON THE PLANS AND AS IS SHOWN IN THE [OFF-STREET SURFACE REPLACEMENT DETAIL].

GENERAL NOTES
1. NEW CURB HEIGHT TO BE 6 INCHES, TYP. IF CURB REPLACES AN EXIST. VERTICAL ELEMENT, CURB HEIGHT TO MATCH EXIST. VERTICAL ELEMENT HEIGHT WITHIN ALLOWANCES SHOWN.
2. PROVIDE EXPANSION JOINTS, WITH DOWELING, AND SAW-CUT CONTROL JOINTS PER THE [CONCRETE CURB DOWELING DETAIL].
3. TRANSITION TOP OF CURB ELEV. OVER 3 FT LENGTH TO MATCH ELEV. OF CONTIGUOUS FINISHED SURFACE.
4. CONCRETE SHALL BE INDOT CLASS A.

VERTICAL CURB DETAIL

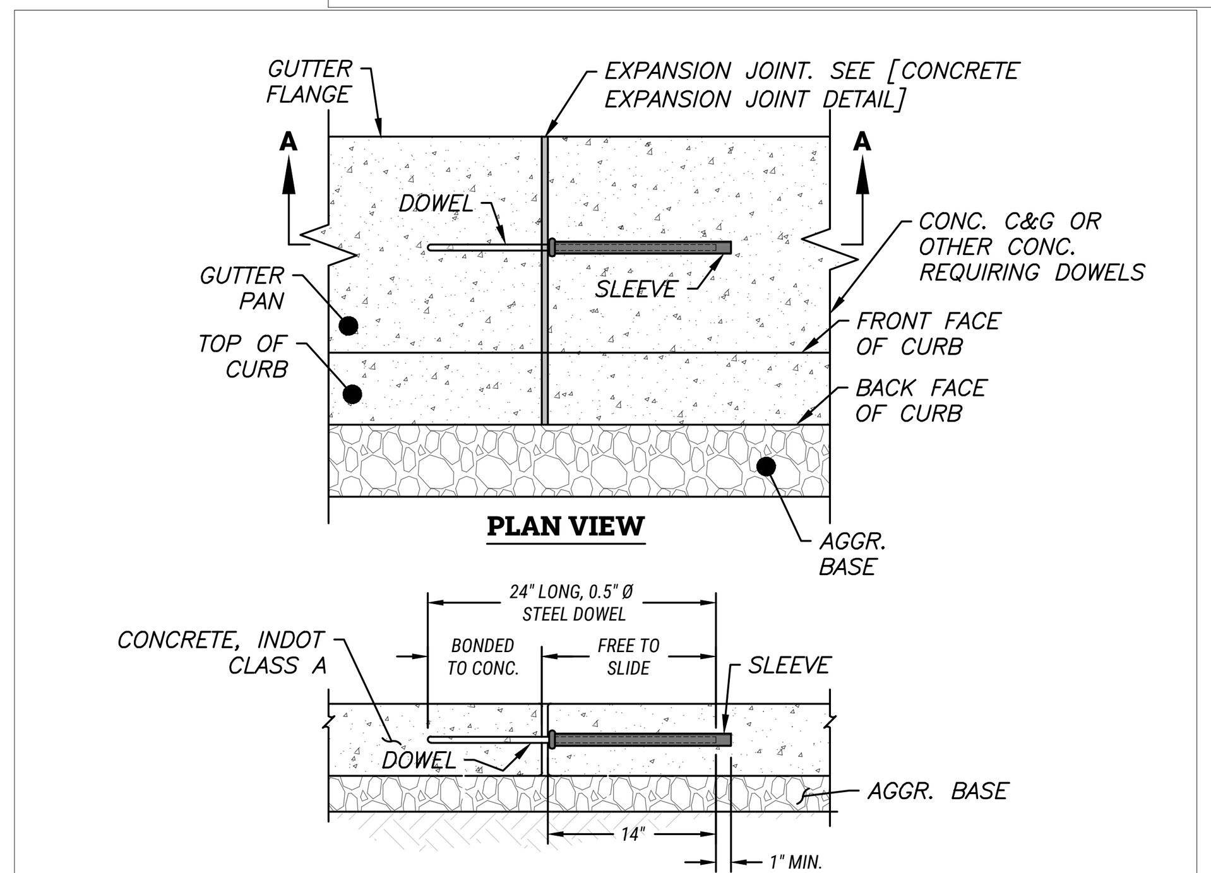
SCALE: 3/4" = 1'



NOTES:
1. SEE PLAN FOR LOCATION OF UNDERDRAINS
2. CORE HOLE INTO DRAINAGE INLET AND CONNECT PIPE TO STRUCTURE WITH FLEXIBLE PIPE COUPLING.

UNDERDRAIN DETAIL

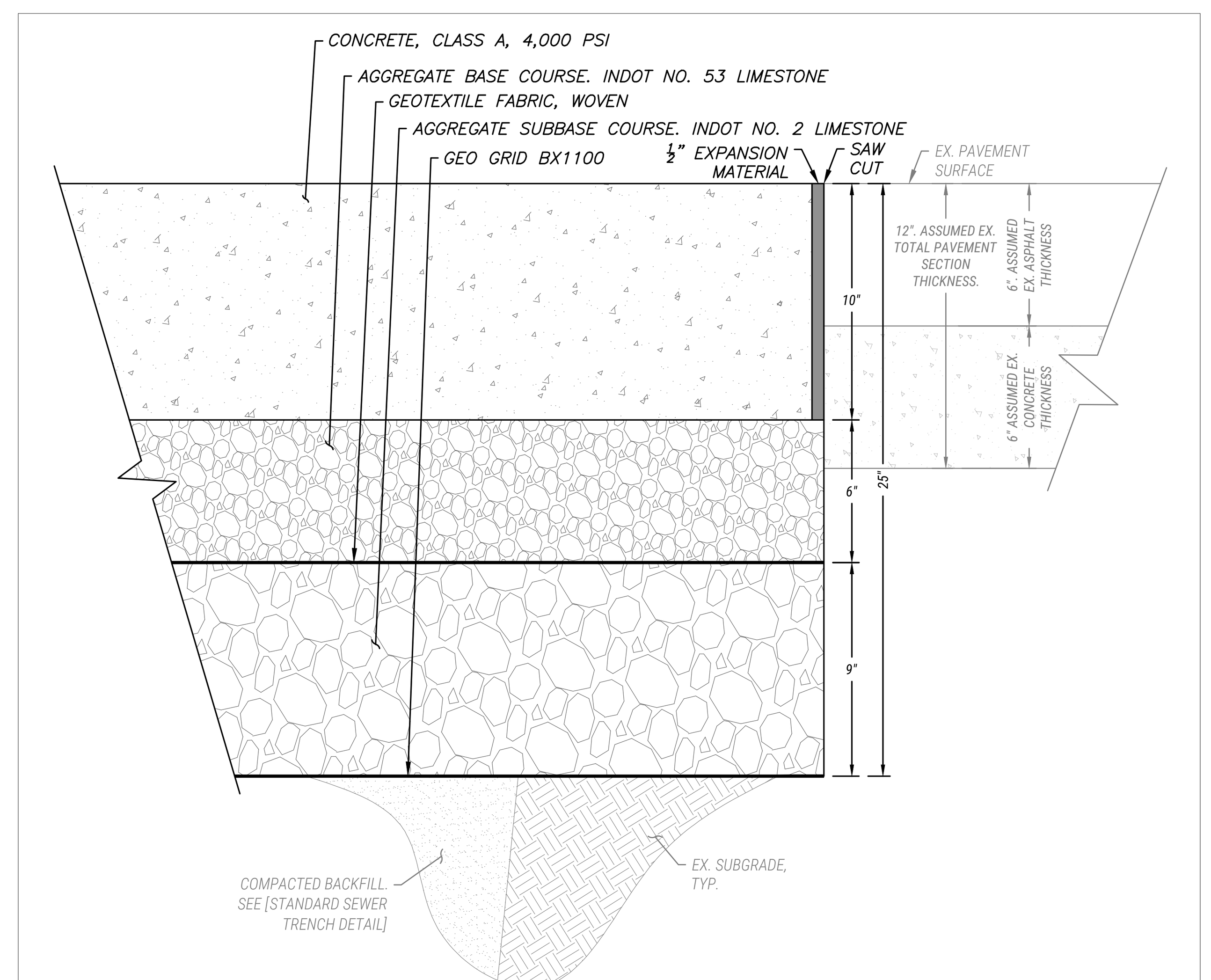
SCALE: 1" = 1'-0"



NOTES
1. THIS DETAIL SHALL BE APPLIED AT ALL EXPANSION JOINTS UNLESS STATED OTHERWISE.
2. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752.
3. BROOM FINISH EXPOSED SURFACE.
4. PROVIDE SAW-CUT CONTROL JOINTS EVERY 10'-0'. SAW-CUT DEPTH TO BY 25% THE THICKNESS OF THE CONCRETE AND A MINIMUM OF 1" INCH DEEP.
5. FOR CURB AND ROLL CURB SECTIONS, CENTER DOWEL IN GEOMETRIC CENTER OF CURB SECTION.
6. PLACE EXPANSION JOINTS IN CURB, GUTTER, OR CURB & GUTTER, AT THE FOLLOWING LOCATIONS:
   6.1. EVERYWHERE THAT TANGENT AND RADIAL CURB, OR CURB & GUTTER, MEET.
   6.2. ON EACH SIDE OF EVERY INLET 3 FEET FROM THE INLET, BUT NO CLOSER THAN 6 FEET FROM ANOTHER JOINT.
   6.3. ON TANGENT SECTIONS PLACE EVERY 50 FT.
7. IF CONSTRUCTING CURB, GUTTER, OR CURB & GUTTER NEXT TO, OR ON, CONCRETE PAVEMENT CONSTRUCTED WITH EXPANSION JOINTS, THEN PLACE EXPANSION JOINTS TO MATCH THE EXPANSION JOINT LOCATIONS IN THE PAVEMENTS.
8. SET JOINTS AT RIGHT ANGLES TO THE FACE AND TOP OF THE CURB, AND AT RIGHT ANGLES TO THE FLOW LINE AND SURFACE OF GUTTERS.

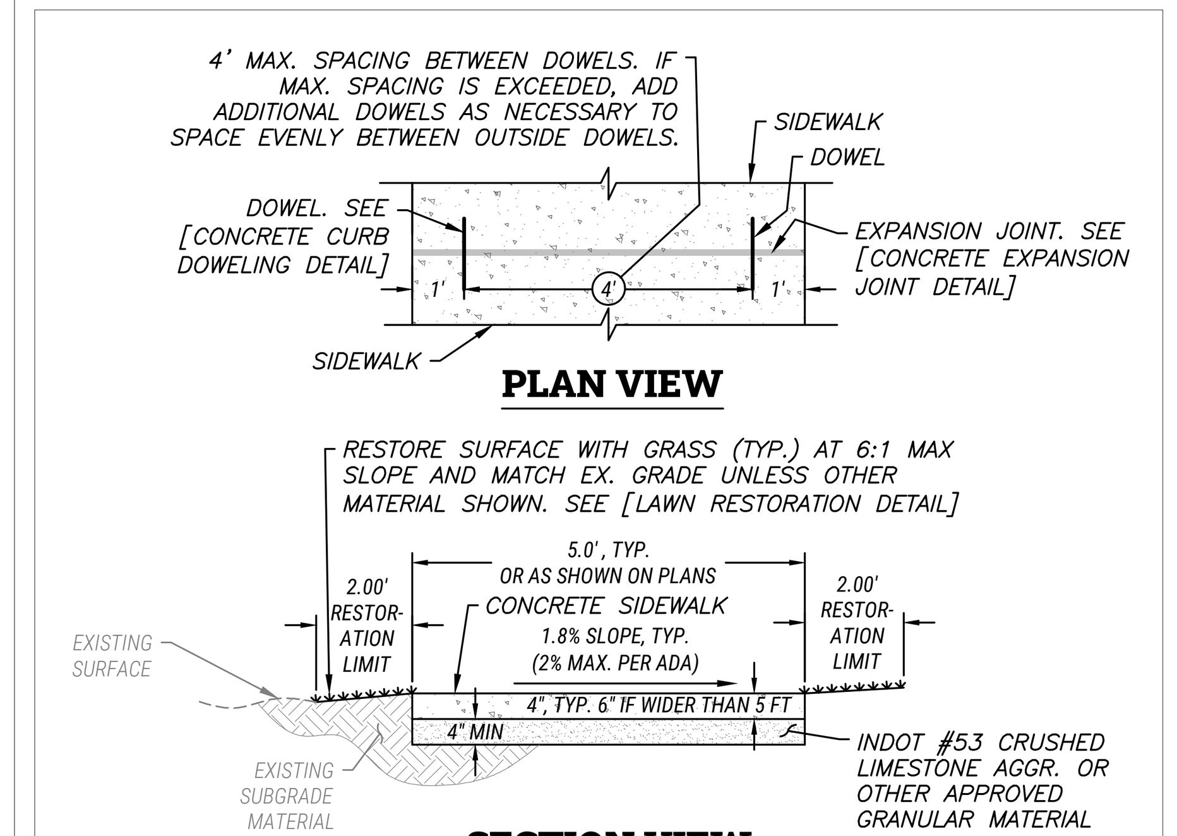
CONCRETE CURB DOWELING DETAIL

SCALE: 3/4"=1'



FIRE STATION CONCRETE DRIVEWAY DETAIL

SCALE: 2" = 1'



NOTES
1. PROVIDE EXPANSION JOINTS, WITH DOWELING, AND SAW-CUT CONTROL JOINTS PER THE [CONCRETE CURB DOWELING DETAIL].
2. SEE PLANS AND GRADING SHEETS FOR SPECIFIC SIDEWALK SLOPES REQUIRED.

SIDEWALK DETAIL

DRAFT - 30% PRELIMINARY DESIGN FOR OWNER REVIEW

Published from AutoCAD by: RYAN LAUGHLIN
Plot Date & Time: Tuesday, November 29, 2022 2:46:07 PM

PAPER SIZE REQUIRED FOR SCALING DRAWINGS: 24"x36"

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REVISIONS

DATE ISSUED: TBD (PLOTTED: 11.29.2022)

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GENERAL SPECIFICATIONS:

1. For Additional Specifications see Indiana Department of Transportation (INDOT) Standard Specifications, latest edition.

2. Not all of the following specifications are applicable to the project. The Contractor shall comply with all applicable specifications.

3. The contractor shall be required to notify the various utility companies 48 hours prior to beginning construction so that exact locations of each utility can be made in the field. The contractor shall take precautions to protect all utilities located on site.

4. DEWATERING:
   - A. Contractor shall provide all dewatering to maintain excavations free from standing water.
   - B. Water removal:
     1. The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water entering excavations, trenches, or other parts of the work. All excavations shall be kept dry during subgrade preparation and continually thereafter until the pipes or structures to be installed are backfilled to the extent that no damage from hydrostatic pressure, flotation, or other causes will result.
     2. All excavations which extend down to or below ground water elevations shall be dewatered by lowering and maintaining the ground water surface beneath such excavations a distance of not less than 12 inches throughout the time the excavations remain open. Dewatering shall be accomplished by shallow well points, or other approved methods. Deep well dewatering will not be allowed. All reasonable attempts shall be made to confine the dewatered area limits to the immediate construction site.
     3. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property.
     4. The Contractor will be held responsible for the condition of any new or existing sewers which he may temporarily use for construction drainage purposes. Any such sewers shall have any resulting sediments removed and disposed of by the Contractor, after the temporary drainage usage is completed.
     5. The Contractor shall dispose of water in a manner acceptable to the Engineer, Owner, and other controlling agencies. Water shall be disposed of in such a manner as will not cause damage to public or private property nor be a nuisance or a menace to the public.
     6. The Contractor will be held responsible to insure that the dewatering operation does not cause any settlement of nearby structures.

5. EXECUTION OF THE WORK:
   - A. All work shall conform to the requirements of these Specifications and all local, county, state and federal agencies having jurisdiction.
   - B. When working in public right-of-way, the Contractor shall maintain local traffic during non-working hours. Access to homes and businesses shall not be blocked. Emergency vehicles shall be provided access at all times. It shall also be the Contractor's responsibility to provide appropriate traffic control during construction. This may include flagmen, signs, barricades, etc., as may be required by the public agency with jurisdiction.
   - C. All poles, fences, sewer, gas, electric, water, sprinkler systems, drainage or other pipes, wires, conduits, manholes, structures and property in the proximity of any excavation shall be supported and protected from damage by the Contractor during construction.
   - D. Wherever sewer, gas, electric, water, sprinkler systems, drainage or other pipes or conduits cross the excavation, the Contractor shall support said pipes and conduits without damage to them and without interrupting their use during the progress of the work. The manner of supporting such pipes, etc., shall be the Contractor's responsibility and any resulting damage to the pipes and conduits shall be corrected by the Contractor to the satisfaction of the Engineer and at no increase in contract price. No additional payment shall be made for said supports.
   - E. Any damage to poles, fences, sewer, gas, electric, water, sprinkler systems, drainage or other pipes, wires, conduits, manholes, structures and property resulting from the Contractor's work shall be promptly repaired by the Contractor. The quality of all such repair work shall be to the satisfaction of the Engineer.
   - F. Unless otherwise directed or permitted, the trench backfill and compaction work shall immediately follow the trench excavation and pipe installation work, to minimize the length of open trench at all times. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench sufficient to avoid overloading and to prevent slides and cave-ins. The stockpiles shall also be protected from contamination with unsatisfactory excavated material or other material that may destroy the quality and fitness of the suitable stockpiled material. If the Contractor fails to protect the stockpiles and any material becomes unsatisfactory as a result, such material shall be removed and replaced with satisfactory on-site or imported material from approved sources at no additional project cost.
   - G. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation. Any water accumulating therein shall be removed so that the stability of the bottom and sides of the excavation is maintained. When necessary the contractor shall provide dewatering in conformance with this Specification.
   - H. Dust conditions in the areas of construction work shall be kept to a minimum by the use of water. The use of salt, or calcium chloride will not be permitted.

6. TESTING:
   - A. Testing shall include compaction of pipe trenches, roadway sub-base, proof rolling, aggregate, HMA and concrete testing. Also included is manhole structure and pipe testing as otherwise specified or required by law. No payments will be made for any work if the test results are below the specified minimum requirements.
   - B. The Contractor shall provide access to the work for any testing, and shall cooperate with the Owner or its representative, and provide labor or equipment necessary to complete said testing, including excavating, backfilling and re-compacting.
   - C. Compaction and concrete tests shall be obtained and paid for by the Owner or its representative.
   - D. Proof rolling, pipe testing, manhole testing (and other required tests not specifically mentioned in No. 6.A above) shall be completed by the Contractor and will be incidental to the contract and no direct payment will be made.

SURFACE INFRASTRUCTURE SPECIFICATIONS:

1. Install grass seed mixture and erosion control fabric Type SC250 as manufactured by North American Green, or approved equal, typical for all ditch, swale and detention basin sideslopes. Secure fabric to side slopes per manufacturer's recommendation.

2. Subsoil shall be excavated or filled to the line and grade necessary for the new pavement section.

3. All unused excavated material shall be disposed of as directed by the Owner.

4. Contractor shall notify the Engineer if peat or other unsuitable material is encountered. If the unsuitable material layer is 2' or less, it shall be removed and "B" Borrow shall be used to fill the void. If the unsuitable material layer is greater than 2', alternative methods of treatment shall be evaluated. No additional payment shall be made for the "B" Borrow fill and compaction; it shall be incidental to the unsuitable material excavation.

5. "B" Borrow for structural backfill material shall have a maximum top size of less than 1-1/2" inches and shall be otherwise suitably (as determined by the Engineer) graded for the specific application, as indicated in the INDOT Standard Specification.

6. PAVEMENT SECTION:
   - A. Aggregate base shall be INDOT #53 limestone. No slag will be allowed.
   - B. Asphalt Surface material shall be HMA, Type B (PG 64-22) surface, 9.5mm, with no recycled asphalt.
   - C. Asphalt for Intermediate Binder shall be HMA, Type B (PG 64-22) Intermediate, 12.5mm. Recycled Asphalt Pavement (RAP) shall not exceed 25% by weight of the total mixture.
   - D. Asphalt for Base shall be HMA, Type B (PG 64-22) Base, 25.0mm. Recycled Asphalt Pavement (RAP) shall not exceed 25% by weight of the total mixture.

7. PAVEMENT SECTION (CONTINUED):
   - E. Asphalt for Intermediate Open Graded (OG) Binder shall be HMA, Type B (PG 76-22) Intermediate, 12.5mm. Recycled Asphalt Pavement (RAP) shall not exceed 25% by weight of the total mixture.
   - F. A Tack Coat shall be applied immediately prior to placing the hot mix asphalt Surface, unless the intermediate course is still of sufficient temperature.

8. GEOTEXTILE FABRIC:
   - A. Geotextile fabric for use under riprap shall be non-woven fabric, 7 oz./sy, minimum weight, US Fabrics "US 180NW", or approved equal.
   - B. Geogrid for road sub-base shall be Tensar BX 1200, or approved equal.
   - C. Geotextile fabric for the pavement underdrain system shall be Geotex 200 ST, woven fabric, or approved equal.

9. CONCRETE WORK:
   - A. All concrete for pavements, driveways, sidewalks, underdrain outfalls, curb and gutter and misc. concrete pads for equipment shall be "Readi-mix" concrete, delivered in rotating drum-type vehicles. The concrete shall be INDOT Class "A", unless otherwise noted.
   - B. All handicap curb ramps are to be as per Indiana Department of Transportation (INDOT) Standards and Specifications, latest edition.
   - C. Borrow material needed to raise the grade of walks shall be incidental to this item.
   - D. Sidewalks:
     - a. Expansion joints shall be placed at a maximum spacing of 40 feet and at other places shown on the drawings.
     - b. Transverse Control Joints shall be placed at equal intervals not to exceed 6 feet.
   - E. Concrete Curb and Gutters:
     - a. Full depth expansion material is required at all cold joints, radii points and at 30' (maximum) increments along straight runs. All joints where new curb is to meet existing curb shall be saw cut.
     - b. Transverse Control Joints shall be placed at equal intervals not to exceed 10 feet.
   - F. Concrete Curing Compound: The only acceptable method of curing will be white membrane.
   - G. All concrete work shall be completed in accordance with American Concrete Institute (ACI) 301-20, Specifications for Concrete Construction, and ACI 318-19 Building Code Requirements for Structural Concrete, and all Concrete Reinforcement in accordance with ACI SP66 Detailing Manual and Concrete and Reinforcing Steel Institute (CRSI) Placing of Reinforcing Bars and Manual of Standard Practice.

SURFACE INFRASTRUCTURE SPECIFICATIONS (CONTINUED):

10. PAVEMENT TRAFFIC MARKINGS
    - A. This work shall consist of furnishing and installing, or removing, pavement traffic markings in accordance with the MUTCD, the INDOT Standard Specification 800, and as shown on the drawings.
    - B. All pavement markings and transverse markings shall be Paint, white or yellow, as indicated on the Drawings, and as defined under INDOT Standard Specification 807.07(a).
    - C. All curb painting shall completely cover the top and vertical face of curb. Curb paint shall be yellow. This does not apply to ribbon curbs.

UNDERGROUND INFRASTRUCTURE INSTALLATION SPECIFICATIONS:

1. TRENCH EXCAVATION:
   - A. GENERAL:
     - a. This work includes, but is not necessarily limited to excavation and backfilling for all storm and sanitary sewer lines, manholes and special structures, water mains and other utilities as shown on the drawings and specified herein.
     - b. Testing and inspection services as required by this section shall be provided by the Owner. Tests shall include field density tests for verifying the degree of backfill compaction. The Contractor's attention is called to the following references:
       - 1) American Society of Testing Materials (ASTM) publications:
         - a) ASTM D-424: plastic limit and plasticity index of soils
         - b) ASTM D-1556: density of soil in place by the sand cone method
         - c) ASTM D-2922: density of soil and soil-aggregate in place by nuclear methods (shallow depth)
         - d) ASTM D-3017: moisture content of soil and soil-aggregate in place by nuclear methods (shallow depth)
     - c. Excavation work shall be performed in accordance with all applicable provisions of the OSHA Standards 29 CFR Part 1926, including Subpart P for trench and excavation safety.
     - d. Excavation for manholes or similar structures shall be sufficient to leave at least 12 inches clear between the outer structure surfaces and the face of the excavation or support members and be of sufficient size to permit the placement and removal of forms, as required, for the full length and width of structure footings and foundations. When concrete is to be placed in an excavated area, special care shall be taken not to loosen or disturb the bottom of the excavation. Excavation to the final grade level shall not be made until just before the concrete is to be placed.
     - e. Before leaving the work for the night, during a storm, or for any other reason, care must be taken that the unfinished end of any pipe is securely closed with a tightly fitting cover or plug. Any earth or other material that may find entrance into the pipe through any such open end of an unplugged pipe shall be removed by the Contractor when work resumes.
   - B. BACKFILL MATERIALS:
     - a. Pipe bedding material shall be as specified in Paragraph 2 of this Specification.
     - b. Granular backfill shall consist of native dune sand, gravel, crushed stone, or other approved granular material containing not more than 10% by weight passing the No. 200 sieve and 100% passing the 1" sieve and being capable of compaction to 95% of maximum density in accordance with ASTM D1557.
     - c. Topsoil shall be screened black organic topsoil per INDOT Standard Specifications.
     - d. Crushed stone material for road base shall be No. 53 complying with Article 904 of the INDOT Standard Specification.
   - C. STABILIZATION:
     - a. If portions of the bottom of trenches or excavations consist of material unsuitable to such a degree that, in the opinion of the Engineer, it cannot adequately support the new work structure, the bottom shall be over excavated and stabilized with granular material. Depth of stabilization shall be as directed by the Engineer. Over-excavation and stabilization so directed shall be paid for as approved by Owner
     - b. Sheeting and bracing or portable trench boxes shall be placed in the trench, as may be necessary for the safety of the work and public, for the protection of the workmen, adjacent properties, and for the proper installation of the work in accordance with all applicable provisions of the OSHA Standards.
     - c. Sheeting and bracing facilities shall be progressively moved as the backfill is placed in such a manner as to prevent the caving in of the sides of the trench or excavation, and to prevent damage to the work.

2. BEDDING:
   - a. All pipe laid in open trenches shall be installed with bedding as indicated on the standard details sheets of the drawings. For reinforced concrete, ductile iron and vitrified clay pipes, pipe bedding material shall be crushed stone, or crushed gravel conforming to the requirements of Indiana Department of Transportation (INDOT) coarse aggregate size No. 8, or compacted natural sand. When PVC pipe is used, embedment material shall be INDOT coarse aggregate size No. 73, natural sand or material approved by the Engineer. Bedding material shall be compacted to 95% of its maximum density as determined in accordance with Paragraph 8.A above.
   - b. Pipe bedding shall be placed and mechanically compacted in lifts. The thickness of each lift shall be field-determined by compaction tests but in no case shall exceed 12". The bedding shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under pipe haunches.
   - c. Pipe laid in open cut shall be bedded as specified above and as indicated in the pipe bedding details contained in the drawings to a height of 12" over the top of the pipe.
   - d. The remainder of the trench shall be backfilled as follows:
     - 1) Backfill of all trenches, unless otherwise indicated on the drawings, shall be granular material conforming to Paragraph 1.B.b. The granular backfill shall be placed in lifts and mechanically compacted. If the Contractor can demonstrate to the satisfaction of the Engineer that satisfactory compaction can be obtained with lifts greater than 8" thick, then these thicker lifts shall be allowed. Each lift shall not exceed 24". If satisfactory compaction cannot be obtained with 8" lifts, the Contractor shall reduce the thickness of the lift and/or change his compaction method until satisfactory compaction is obtained. The Owner's soils engineering Consultant shall be involved in this determination of backfill compaction.
     - 2) Backfill details are shown in the Miscellaneous Details of the drawings.
     - 3) Trenches shall be backfilled to existing grade or proposed grades as shown on the drawings.

3. HORIZONTAL DIRECTIONAL DRILLING (HDD):
   - A. GENERAL:
     - a. The work specified in this section consists of furnishing and installing underground water mains using the horizontal direction drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring. This work shall include all equipment, materials, and labor for the complete and proper installation, testing, and restoration of underground utilities and environmental protection and restoration.
     - b. The requirements set forth in this document specify a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work authorized under the Contract.
     - c. Work Plan: Prior to beginning work, the Contractor must submit to the Engineer a general work plan outlining the procedure and schedule to be used to execute the project. Plan should document the thoughtful planning required to successfully complete the project.
     - d. Equipment: Contractor shall submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project.
     - e. Material: Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.
   - B. EQUIPMENT:
     - a. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the pipe, a drilling fluid mixing & delivery system of sufficient capacity to successfully accommodate the work, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.
     - b. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the work. The hydraulic power system shall be self-contained with sufficient pressure and volume for the work. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. The rig shall be grounded during drilling and pull-back operations.
     - c. Drill Head: The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.
     - d. Guidance System: Shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.
     - e. Drilling Fluid (Mud) System:
       - 1) Mixing System: A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. Mixing system shall continually agitate the drilling fluid during drilling operations.
       - 2) Drilling Fluids: Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 3.8 - 10. Water of a lower pH or with excessive calcium shall be treated with appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall.
       - 3) Delivery System: The mud pumping system shall have a suitable capacity and be capable of delivering the drilling fluid at a constant minimum pressure as required for the project conditions. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A berm, minimum of 12" high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage facilities.

UNDERGROUND INFRASTRUCTURE INSTALLATION SPECIFICATIONS (CONTINUED):

   - C. OPERATIONS:
     - a. The Engineer must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer's approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of the Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.
     - b. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.
     - c. Site Preparation: Work sites shall be selected by the Contractor and shall be graded or filled to provide a level working area. No site alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.
     - d. Drill Path Survey: Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. The locations of all existing utility lines which will be crossed shall be accurately determined and the utility lines shall be excavated and exposed where small clearances will exist. If Contractor is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.
     - e. Environmental Protection: Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200 ft. of any water-body or wetland.
     - f. Safety: Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to Engineer.
     - g. Pilot Hole: Pilot hole shall be drilled on bore path to verify no pipe elevation deviations greater than 8% of depth over a length of 100'. In the event that the pipe elevation does deviate more than 8% of depth in 100', Contractor will notify Engineer and Engineer may require Contractor to pull-back and re-drill from the location along bore path before the deviation. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30 minutes. If mud fracture or returns loss continues, Contractor will cease operations and notify Engineer. Engineer and Contractor will discuss additional options and work will then proceed accordingly.
     - h. Reaming: Upon successful completion of pilot hole, Contractor will ream bore hole to a minimum of 28% greater than outside diameter of pipe joint using the appropriate tools. Contractor will not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle.
     - i. Pull-Back: After successfully reaming bore hole to the required diameter, Contractor shall pull the pipe through the bore hole, with a swivel in front of the pipe. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into bore hole. During pull-back operations, Contractor shall not apply more than the maximum safe pipe pull pressure at any time. In the event that pipe becomes stuck, Contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, Contractor will notify Engineer. Engineer and Contractor shall discuss options and then work will proceed accordingly.

4. PRESSURE TAPPING SLEEVE AND VALVE:
   - a. The exact location of each pressure tap shall be carefully field-determined by laying out the associated new piping in relation to the location of existing facilities.
   - b. The area required for the pressure tapping equipment shall be excavated and braced and dewatered, if required, for safe and proper working conditions.
   - c. The outer surface of the existing water main shall be adequately cleaned and the tapping sleeve installed tightly around the main.
   - d. The pressure tapping valve flange shall be permanently secured to the sleeve flange and the valve body shall be supported underneath.
   - e. Adequate support shall also be provided under the tapping sleeve and adjacent to the existing water main to prevent any damage or breaking of the main during the pressure tapping procedure.
   - f. The pressure tapping machine shall be connected to the valve and fully supported from underneath.
   - g. The entire pressure tapping assembly shall be pressure tested before the tapping procedure is started, to assure a water-tight operation.
   - h. The pressure tapping machine shall be in good working condition and adequate for the pressure taps required. The machine operator shall be experienced and well qualified.
   - i. After the water main tap is completed and the machine cutter and water main pipe wall coupon are withdrawn, the tapping valve shall be closed and the machine removed.
   - j. Prior to backfilling the pressure tapping excavation work:
     1. At least 10 ft. of new water main shall be connected to the pressure tapping valve.
     2. All exposed existing water main and the pressure tapping sleeve and valve and the new water main shall be adequately bedded to the top of pipe.
   - k. Each pressure tapping sleeve and valve shall be a combination provided by one manufacturer/supplier.
   - l. Each pressure tapping sleeve shall be a ductile iron or stainless steel two-piece unit, with a pressure rating of 250 psi, which is bolted together at the top and bottom. The ends of the sleeve shall have mechanical joints for a pressure tight seal around the existing water main. The outlet on the sleeve for the tapping valve shall have a flanged end. All sleeve, mechanical joint and flange bolts and nuts shall be resistant to underground corrosion.
   - m. Each pressure tapping valve shall comply with all pertinent requirements of AWWA C509 and shall have an oversized seat ring to allow the passage of the pressure tapping machine cutters. The pressure tapping valve shall have a flanged end for connection to the tapping sleeve and a mechanical joint end for the connection to the new water main pipe. All flange and mechanical joint bolts and nuts shall be resistant to underground corrosion.

5. LINE-STOP AND PLUGS
   - a. The exact location of each line-stop and plug shall be carefully field-determined to:
     4. Maximize the length of the existing main to be abandoned.
     5. Be clear of existing facilities.
   - b. The area required for the line-stop and plug procedure shall be excavated and braced and dewatered, for safe and proper working conditions.
   - c. The outer surface of the existing water main shall be adequately cleaned and the line-stop sleeve installed tightly around the main.
   - d. Prior to mounting a temporary pressure tapping valve and machine, provide adequate support under the line-stop sleeve and exposed existing water main to prevent damage or breakage of the existing main.
   - e. Install the pressure tapping valve and machine and perform the pressure tapping procedure in accordance with items 4.a through i.
   - f. Remove the pressure tapping machine and mount the line-stop machine on the temporary pressure tapping valve and insert plugging head into the existing water main.
   - g. Test for proper plugging of the existing main at the drain nozzle provided on the line-stop equipment and adjust the plugging head, as necessary, until proper plugging occurs.

   Note: Repeat preceding items 5.a through g. at each connection point of the existing water line being abandoned.

   - h. Saw-cut and remove a section of water main immediately next to the line-stop. The water that drains out of the existing main can either be allowed to soak into the bottom of the excavation or can be pumped onto the ground surface if no damage to any public or private property will result.
   - i. The outer surface end of the existing water main shall be adequately cleaned and a ductile iron mechanical joint pipe sleeve, with a pre-assembled mechanical joint end plug, shall be installed on the end of the existing main.
   - j. Provide precast concrete blocking for the end plug, as per the Plan details, and provide adequate bedding to the top of pipe for the end plug and blocking.
   - k. Partially remove the line-stop plugging head and observe the end plug for leaks and make any necessary corrections to prevent leakage.
   - l. Retract the line-stop plugging head and close the temporary tapping valve.
   - m. Remove the line-stop machine, install the completion machine on the tapping valve and open the valve.
   - n. Install the completion plug in the line-stop sleeve nozzle.
   - o. Remove the completion machine and the temporary tapping valve.
   - p. Provide any necessary additional bedding to the existing water mains and backfill the excavation.
   - q. Each line-stop procedure shall consist of the following items.
     1. A two-piece sleeve constructed of .375" thick steel, with heavy-duty bolts, studs, nuts, washers and gusseted brackets. The I.D. of the sleeve shall exceed the O.D. of the existing water main by .25" to allow for variations in the roundness of the main.
     2. Outlet nozzle, welded with stress-relief, to one of the sleeve pieces. The outlet nozzle shall be .375" thick steel pipe as per ASTM A234 with a steel flange end, 150 lb, ANSI B16.5 design. The outlet nozzle shall have ductile iron tapered threads (10/in) on the inside, for the receipt of a completion plug.
     3. The interior of the sleeve piece with the outlet nozzle, shall be grooved with a gasket around the nozzle opening, for a water-tight connection against the outside surface of the existing water main.
     4. Completion plug shall be machined and stress-relieved steel weldment with two circumferential grooves, one to receive the locking devices from the nozzle flange and the second to contain a compressible "O" ring to seal pressure tight against the bore of the nozzle flange.
     5. The exterior and unmachined interior surfaces of the preceding items shall be sandblasted and receive a .02" (dry film thickness) coating of coal tar epoxy.

UNDERGROUND INFRASTRUCTURE SPECIFICATIONS - WATER MAIN PIPE, VALVES AND HYDRANTS

1. The work included under this Specification includes the supply and installation of all pipe, fittings, valves and hydrants for the water main work as shown on the drawings, and specified herein.
2. SUBMITTALS
   - a. The Contractor shall submit shop drawings for the water main pipe, fittings, restraints, gaskets, valves, valve boxes and hydrants furnished herein.
   - b. Product data to include: Technical descriptive literature and bulleting, and Pressure rating for each type of pipe provided.
3. REFERENCES
   - a. Codes and standards referred to in this Section are:
     1. AWWA C600 - Installation of Ductile-Iron Water Mains and Appurtenances.
     2. AWWA C605 - Installation of PVC Water Main and Appurtenances.
4. DELIVERY, STORAGE AND HANDLING
   - a. Damaged Items: If in the process of transportation or handling any item is damaged, it shall be replaced at the Contractor's expense.
   - b. Blocking and Stakes: Provide suitable blocking and stakes installed to prevent stored pipe from rolling.
   - c. Storage for Gaskets: Store gaskets for pipe joints in a cool place and protect gaskets from light, sunlight, heat, oil or grease until installed.
     1. Do not use any gaskets showing signs of checking, weathering or other deterioration.

A. PRODUCTS
1. DUCTILE IRON PIPE
   - a. Unless noted otherwise, all Ductile Iron Pipe shall be Class 52 for 4"ø thru 12"ø and shall be Class 51 for 16"ø and larger and shall conform to the latest revisions of ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51.
   - b. Pipe joints shall conform to the following requirements and standards:
     1. Push on Joints: ANSI/AWWA C111/A21.11
     2. Mechanical Joints: ANSI/AWWA C110/A21.10
     3. Cement Lining: AWWA C104
   - c. Pipe fittings shall be ductile iron Class 250 and shall conform to the following requirements:
     1. Mechanical Joints ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11
     2. Bolts and Nuts ANSI/AWWA C111/A21.11; tee-head bolts and hexagonal nuts
     3. Body Full or Compact
     4. Cement Lining AWWA C104
     5. Gaskets ANSI/AWWA C111/A21.11
     6. Joint Restraint shall be provided at joints of all pipe bends using "mega-lugs".
     7. Gasket Restraint shall be American "Fast-Grip" or "Flex-Ring" joint, or approved equal.
2. PVC, C-900 PIPE
   - a. PVC water main pipe shall be C-900, pressure class 200, conforming the latest revisions of AWWA C-900.
   - b. Pipe joints shall be push-on type.
   - c. Pipe fittings shall be C-900 PVC pressure class 200, with push-on joints.
3. HIGH DENSITY POLYETHYLENE PIPE
   - a. Pipe sections shall be high density polyethylene (HDPE) which are joined by butt-fusion into a continuous pipe length before it is pulled into place. The HDPE pipe shall be ductile iron pipe size (DIPS), with the same outside diameter as ductile iron pipe. The HDPE pipe shall conform to Plastic Pipe Institute Designation PE 3408 and the following Specifications for drinking water use; AWWA C906 and NSF 61.

     Pipe Butt Fusion: The following procedures shall be followed in the joining sections of HDPE PE 3408 pipe by butt-fusion:
     1. Clean pipe ends with a clean, lint free cloth.
     2. Face pipe ends to machine stops.
     3. Check pipe end alignment in clamps. Adjust clamps if required.
     4. Verify proper heater plate temperature.
     5. Insert heater plate between opposing pipe ends and apply sufficient force to initiate contact between pipe ends and heater plate. After contact between heater plate and pipe ends is established, only use enough force to maintain contact. Caution: DO NOT APPLY PRESSURE WHILE HEATING.
     6. Heat as required allowing for weather and jobsite conditions.
     7. Remove heater plate and bring the heated pipe ends together quickly, being careful not to slam the pipe ends together. Apply sufficient pressure to form a double roll-back bead.
     8. Maintain fusion pressure while allowing the joint to cool as given in tables.
     9. Allow joint to cool an additional 5 minutes prior to removing joint from fusion jig.
     10. Inspect joint for quality.

Notes:
1. A fusion interface of 75 psi is recommended for butt fusion of HDPE PE3408 piping through 12" diameter and 40 psi above 12". Fusion equipment manufacturers should be consulted for proper conversion of this interfacial pressure to gauge pressure for their specific equipment.
2. Refer to Heat Fusion Joining Procedures manual for additional information.

Pipe Fittings: HDPE pipe fittings shall be ductile iron Class 250, as specified in Item 2.01. of Section 02510 of these Specifications.

Pipe Couplings: The connection of the ends of the HDPE pipe segments which are installed by HDD procedures shall be made with ductile iron expansion/contraction type couplings with pressure ratings equal to or greater than the HDPE pipe. The couplings shall be suitable for direct burial and shall be resistant to underground corrosion. The couplings shall be furnished by the HDPE pipe supplier. The HDPE pipe segments shall not be field-cut for the installation of the couplings until the HDPE pipe temperature has equalized with the ground temperature and stopped expanding or contracting.

Pipe Expansion/Contraction Resistance System: On each side of a coupling, valve or fitting, the HDPE pipe manufacturer shall provide suitable projections which can be attached to the HDPE pipe by thermal fusion in the field and incorporated in a concrete collar around the pipe to resist pipe expansion and contraction movement. The HDPE pipe manufacturer or supplier shall design the pipe projections based on the lengths of the HDPE pipe segments installed by HDD procedures and a maximum annual HDPE pipe temperature differential of 40°F. This design shall be based on the pipe projections providing 100% of the resistance to the pipe expansion and contraction forces. HDPE pipe projection design details and structural calculations shall be prepared by the pipe manufacturer or supplier and submitted for the Engineers review. The cost of the expansion/contraction resistance systems shall be included in the unit price per foot for the HDPE.

Pipe Location Conductor: A continuous insulated copper conductor shall be installed with the HDPE by HDD procedures. The conductor shall be solid wire, single conductor, #10 AWG, Type THW. The conductors shall be satisfactorily spliced at each HDPE pipe coupling with a minimum of 12 inch overlap and four clips. All copper conductors shall be connected to either ductile iron pipe or a cast iron valve box at each end and satisfactorily field-tested for continuity after installation.

4. GATE VALVES
   - a. Materials: Unless otherwise shown or specified, furnish and install gate valves meeting the following requirements and manufactured by Clow Corporation or Mueller Co.:

Nominal Valve Size, Inches	Standard	Type
4 thru 10"	AWWA C509	Resilient Seat

   - b. Non-rising Stem: For buried service, furnish non-rising stem gate valves. All gate valves shall open by turning the stem to the left.
   - c. Stem Seals: Use O-ring stem seals.
   - d. Packing: Provide non-asbestos braided, twisted or formed ring type packing suitable for the pressure-temperature ratings of the valve.
   - e. Bonnet: Provide 4-inch and larger gate valves with outside screw and yoke bonnets.
   - f. Accessories: Provide stainless bonnet bolts, studs and nuts. Make wedging devices bronze to iron or bronze to bronze. Provide glands which are bronze or bronze bushed and bronze gland bolts and nuts.
5. BUTTERFLY VALVES
   - a. General
     1. Provide butterfly valves for 12"ø and larger diameter water mains of the fully flanged pattern that meet the requirements of AWWA C504.
     2. Provide butterfly valves of the rubber-seated tight closing type. Provide Buna-A or new natural rubber seats, as required for the service.

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CERTIFICATION

DRAFT
(NOT CERTIFIED)

PROJECT NAME, OWNER, & LOCATION

Long Beach Fire Station (2023)

Owner: Town Of Long Beach, Indiana
Location: 2400 Centre Court, Long Beach, IN 46360

REVISIONS

DATE ISSUED: TBD (PLOTTED: 11.29.2022)

DRAWN BY: SNO

SHEET TITLE: STANDARD SPECIFICATIONS - 1

SHEET NO. C-3.0

UNDERGROUND INFRASTRUCTURE SPECIFICATION – WATER MAIN PIPE, VALVES, AND, HYDRANTS (CONT.)

b. Materials:
1. Provide butterfly valve materials as specified below:
   a. Valve bodies: Cast iron ASTM A126, Class B, ASTM A48, Class 40
   b. Valve shafts: ASTM A276 or A479, Type 304, stainless steel or carbon steel with A276 or A479, Type 304 stainless steel journals.
   c. Valve discs: Cast iron ASTM A48, Class 40 or Alloy cast iron, ASTM A436, Type I or Ductile Iron ASTM A536, Grade 65–45–12
   d. Mating seat surface: Stainless steel (castings) ASTM A743, A744 Grade CF–8 or CF–8M Stainless steel ASTM A276 or A479, Type 304 Alloy Cast Iron ASTM A436, Type 1
   e. Seats: Buna–N (Wastewater) New Natural rubber or Buna–N (Water)
   f. General AWWA C504 Construction: manufacture valves and all accessories, including operators, to meet the requirements of AWWA C504, except as otherwise specified. Provide valve bodies of the mechanical joint–end type Wafer body type valves without lugs are not acceptable.
   g. Pressure: Provide butterfly valves of pressure classes that are not less than Class 150B, that exceed the pipeline test pressure in which the valve is installed, or as specified, whichever is greater.
   h. Shafts: If stub shafts are furnished, extend the shafts a minimum of 1–1/2 diameters into the discs and provide clearance between the shaft and discs not exceeding the following:

Shaft Diameter (Inches)	Maximum Radial Clearance (Inches)
1/2 to 1–1/2	.002
2 to 4	.0025
5	.003
6	.004

   i. Hydrostatic Testing: Unless otherwise specified, hydrostatically shop test all valves at pressures that are at least equal to the test pressures specified for the pipelines in which they are to be installed. Test the valves, first by applying the hydrostatic pressure with the valve open and then with the valve
   j. Perform the test for a minimum duration of 30 seconds. Demonstrate that the valves remain structurally sound and that no leakage through external valve surfaces occurs under the test pressure.
   k. The butterfly valves shall all be the Pratt AWWA C–504 Class 150 B Groundhog type.

6. MANUAL BUTTERFLY VALVE OPERATORS
   General: Provide operators as an integral part of the valve. Operators shall be the enclosed, traveling–nut type.
   a. Traveling–Nut Type: Fabricate traveling–nut type operators with a threaded steel screw and a bronze nut. Provide a slotted–lever or link–lever system to transfer the applied torque to the disc shaft. Equip all rotating shafts, screws and links with separate bearings. Provide thrust bearings.
   b. Stop–Limiting Devices: Provide stop–limiting devices on traveling–nut operators to prevent over travel of the disc in either direction. Design the operator to hold the disc in any position without flutter or wear on the valve or operator. House the operators in a watertight enclosure. Pack operators with grease or with oil. For buried or submerged service, equip valve operators with stainless steel external bolting.
   c. Position Indicators: The buried butterfly valve operators shall provide externally visible indication of the disc position.

7. VALVE BOXES
   a. Equip all direct burial valves with left–turn–to–open operating nuts. Equip all direct burial valves with adjustable, cast–iron valve boxes and extension pieces to grade. Provide two tee wrenches for each size and type of operating nut.
   b. The valve box shall consist of the following components; Bottom section, Top section and Lid.
   c. The Valve Box Bottom section shall be equipped with a base flange of not less than 10 inches in diameter, and an inside diameter of 5–1/4 inch, with outside threads. The bottom height can vary.
   d. The Valve Box Top section shall be equipped with an inside diameter of 6–¾ inches, with inside threads to match bottom section outside threads. The top shall be capable of accepting a standard drop lid, with an inside diameter of 7–3/8 inches, and an outside diameter of not less than 9 inches. The bottom height can vary.
   e. The Valve Box lid shall be the drop type with an outside diameter of 7–5/16 inches and a total height of 3–1/2 inches. The lid should bear the word "WATER" located in the center of the lid.

10. FIRE HYDRANTS
   a. Shall be suitable for a 6" pipe connection with 5¼" valve opening and shall have two – 2½" hose nozzles and one 4" pumper nozzle.
   b. Shall be East Jordan Iron Works Model 5–BR, with mechanical joint inlet and 5'–0" bury depth.
   c. Fire hydrant operating nut shall be a 1" square nut and shall be left–turn to open.
   d. A STORZ fitting on the Pumper connection is required.

11. POLYETHYLENE ENCASEMENT FOR DUCTILE–IRON PIPE AND APPURTENANCES:
   GENERAL: Shall be in conformance with ANSI/AWWA Standard C105/A21.5, or latest revision.
   a. The polyethylene can be supplied in sheets or tubes that are new and unused. It shall also bear all proper identification markings in conformance with the Standard, or latest revision.
   b. The polyethylene shall be made of high–density cross–laminated polyethylene film with a minimum thickness of 8 mil.
   c. The polyethylene shall be black in color, weather resistant, containing not less than 2 percent carbon black with an average particle diameter of 50 nm or less.
   d. The polyethylene shall be supplied to properly encase all ductile–iron pipe and appurtenances specified for the project.
   e. The manufacturer shall take all adequate measures during production to ensure compliance with all applicable Standards, latest revision, by performing quality control tests and maintaining results of those tests, and submitting them to the purchaser if so requested.

B. EXECUTION
1. PREPARATION
   a. Dry Trench Bottoms: Lay pipe only in dry trenches having a stable bottom.
   b. Perform trench excavation and backfill in accordance with these Specifications.
2. INSTALLATION
   a. General: Install all piping in accordance with the manufacturer's recommendations.
   b. Code Requirements: Provide pipeline installations complying with AWWA C600 for iron pipe and as modified or supplemented by the Specifications.

UNDERGROUND INFRASTRUCTURE SPECIFICATION – WATER MAIN PIPE, VALVES, AND, HYDRANTS (CONT.)

3. Pipe Laying – General:
   a. Generally lay all pipes with bells pointing ahead, toward the direction of pipe installation.
   b. Carefully place each pipe and check for alignment and grade.
   c. Make adjustments to bring pipe to line and grade by scraping away or filling in select fill material under the body of the pipe.
   d. Wedging or blocking up the pipe barrel is not permitted.
   e. Bring the faces of the spigot ends and the bells of pipes into fair contact and firmly and completely shove the pipe home.
   f. As the work progresses, clean the interior of pipelines of all dirt and superfluous materials of every description.
   g. Keep all lines absolutely clean during construction.
   h. Lay pipelines to line and grades shown.
4. Pipe Laying – Trenches:
   a. Lay all pipelines in trench excavations on granular bedding material.
   b. Properly secure the pipe against movement and restrain the pipe bend joints in the excavation as required.
   c. Carefully grade and compact pipe bedding.
5. Bell Holes:
   a. Cut out bell holes for each joint as required to permit the joint to be properly made and allow the barrel of the pipe to have full bearing throughout its length.
   b. Thoroughly tamp bell holes full of select fill material following the making of each joint.

6. Temporary Bulkheads:
   a. Provide temporary bulkheads at the ends of section where adjoining pipelines have not been completed.
7. Valve Box Setting:
   a. Install valve boxes vertical and concentric with the valve stem.
   b. Satisfactorily reset any valve box which is moved from its original position, preventing the operation of the valve nut from above grade.
   c. The valve box shall always be located on the opposite side of the valve from the street or roadway.
8. Restraints and Anchorage Shall be as follows for water mains and fittings:
   a. All watermain fittings and end plugs shall have concrete blocking as indicated in the standard detail on the drawings.
9. Valve Setting:
   a. Erect valves carefully in their proper positions, free from all distortion and strain, with mechanical joints, and pack and leave in satisfactory operating condition.

C. APPLICATION OF PRESSURE TESTS FOR NEW WATER MAINS AND APPURTENANCES
General: Test the piping under the hydrostatic test pressure of 150 psi gauge in accordance with AWWA C–600–93, Section 4.1. Apply the pressure to the piping through a tap in the pipe by means of a hand pump or other approved method and maintain for a minimum of 4 hours. Do not use air for testing.
1. Allowable Leakage:
   a. Do not allow leakage for any new water mains and appurtenances as determined by the above test, to exceed the allowable leakage for ductile–iron water mains as given by the following formula in Section 4.2 of AWWA C600–93: $L = (S \times D \times (P)^{1/2})/133,200$ in which L is the allowable leakage in gallons per hour, S is the length of water main tested in feet, D is the nominal diameter of the pipe in inches and P is the average test pressure in psi gauge.
   b. This pressure testing work can be performed when the water mains are filled for disinfection. The water for these purposes shall be provided by the Water Department at no charge. However, any water required to refill and retest the water mains shall be paid for by the Contractor at a cost determined by the Water Department.
2. Disposal:
   a. Properly dispose of all test water in conformance with local health department requirements. Discharge into the nearby sanitary sewer is acceptable, if coordinated with the Sewer Department.

D. DISINFECTION OF NEW WATER MAINS AND APPURTENANCES
1. Disinfection Procedures for Piping:
   b. Flush pipelines with clean water before disinfecting. Disinfect in accordance with AWWA C651–92 by sticking chlorine tablets to the top of each section of water main pipe during the pipe installation work. Then fill the water mains with water.
   c. After filling the water mains, a residual of not less than 25 mg/l of chlorine shall exist.
   d. Allow the chlorine solution to remain in the lines for at least 24 hours. Recheck the chlorine residual in the pipeline. If the free chlorine residual is less than 10 mg/l after 24 hours, allow another 24 hours of disinfection time.
   e. Bacteriological samples will be taken and tested by the Water Department on two successive days, at no expense to the Contractor. If the samples are not satisfactory, repeat the sampling and testing procedure once and then repeat the entire disinfection procedure, if necessary. The Contractor shall be responsible for the expense of taking and testing additional samples until satisfactory samples are obtained.
   f. After meeting the previous requirements in this subsection, thoroughly flush out the water mains with water from the existing distribution system. Do not permit flushing water to discharge into existing water mains. The water for this flushing will be furnished by the Water Department at a cost determined by the Water Department.
   g. The volume of flushing water shall be determined by a meter on each flushing line.
   h. Flushing water must be dechlorinated before it is discharged onto the ground surface. The Contractor shall provide all equipment and chemicals necessary and shall operate the dechlorination system to eliminate all of the chlorine residual in the flushing water. An acceptable alternative is discharge into the nearby sanitary sewer, if coordinated with the Sewer Department.
   i. The coordination of water main testing and activation into use requires the approval of the Water Department.

WATER SERVICE LINE
A. GENERAL
1. WORK INCLUDED
   a. The work specified herein covers the existing water service line protection and reconnection work which is required to install the new water mains for this project.
   b. The existing water service line reconnection work shall be a joint effort of the Contractor and the Water Department, as specified herein.
   c. Contractor shall coordinate all watermain works with, and follow all requirement of the local Water Department and Inspection Department
B. PRODUCTS
1. RECONNECTION WATER SERVICE LINES
   a. Shall be 1" diameter unless noted otherwise, or, match larger diameter existing services, and shall be type K copper tubing, as per ASTM B–88.
   b. The Contractor shall provide all reconnection water service line material.
2. RECONNECTION WATER SERVICE FITTINGS
   a. All brass corporation stops, pipe saddles and adapter couplings shall be provided by the Contractor and approved by the Water Department.

UNDERGROUND INFRASTRUCTURE INSTALLATION SPECIFICATIONS:

1. This work shall consist of furnishing and installing, or removing, all piping, manholes, inlets and other appurtenant items as necessary to complete all underground construction as indicated on the Drawings.
   Contractor shall coordinate all sewer work, and follow all requirements of the local sewer provider utility and inspection department
   Contractor is responsible for obtaining all necessary local permits required for sewer work.

2. PIPING:
   A. All new sanitary sewer pipe shall be polyvinyl chloride pipe (PVC), SDR 21 unless otherwise noted.
   B. PVC pipe and fittings shall have smooth interior and shall have elastomeric gasket joints conforming to the latest revision of ASTM Specification F477 and ASTM Specifications D3034. All PVC pipe shall be tested for deflection in accordance with these specifications and ASTM Specification D2412. Cell classification shall be as defined in ASTM D1784. Only manufactured fittings shall be used.
   C. Each pipe shall be identified with the name of manufacturer, nominal size, cell classification, ASTM designation, the pipe stiffness designation, and the manufacturer's date code.
   D. All polyethylene pipe (HDPEP) for pavement underdrains shall be high density ADS N–12 or equal unless otherwise noted. Perforated HDPEP shall be ADS single–wall, 3–slot pattern type or equal.
   E. All corrugated metal pipe and arch pipe (CMP) shall be 16 gauge steel, fully bituminous coated unless otherwise noted.
   F. All new sanitary sewers shall be subject to a low pressure air test, a deflection test (95% mandrel), an internal video inspection and all new manholes shall have a vacuum test. All tests shall be in conformance with IDEM requirements &/or Ten State Standards.

2. Coordinate storm and sanitary sewer building connections with Building Contractor/Plumber, Architect and MEP designers

3. At vertical separation crossings of water mains and sewers a full length of each pipe shall be 'centered' on the point of crossing to maximize the separation of pipe joints.

4. All water mains shall have 18" vertical clearance and 10' horizontal clearance from all sewers. .

UNDERGROUND INFRASTRUCTURE INSTALLATION SPECIFICATIONS

5. MANHOLES AND INLETS:
   A. All iron castings for manholes and inlets shall receive a factory applied coat of asphalt emulsion paint to the entire casting. Iron castings and frames shall be included in the cost of the structures.
   B. All solid lid (Type 4) iron casting shall be East Jordon 1120, or approved equal. Open pick holes or vent holes will not be permitted.
   C. All storm sewer castings shall have a Fish Image and have "DUMP NO WASTE" lettering cast in the metal.
   D. Manholes and inlets shall conform to PROJECT Standards and ASTM C–478. Joints shall be watertight.
   E. All joints for the precast manholes shall use RUB'R–TEK butyl rubber sealant as manufactured by K.T. Snyder Company, Inc., Houston, Texas, or approved equal water tight seal.
   F. Curb inlet castings shall be aligned with the inside face of adjacent curbs.
   G. All inlet and manhole structures shall be adjusted to final plan grade as part of the cost of the respective items.
   H. All manhole structures shall have a 6" bed of INDOT #53, compacted in place, extending beyond the base slab at least 6" all around.

6. SEWER INSTALLATION:
   A. All lengths of pipe shall be dimensioned accurately to measurements established at the site and shall be worked into place without springing or forcing. Cut sections of pipe shall be reamed to remove all burrs. The Contractor shall cut all pipe and drill all holes that may be necessary.
   B. Utmost care shall be exercised in transporting and handling all pipe, fittings, etc., in order to avoid shock and damage to pipe and coatings. Lifting shall be by hoist or skids when hand lifting is not feasible. Dropping will not be permitted. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. Damaged or defective pipe and appurtenances shall be replaced, at no increase in project cost.
   C. The pipe shall be thoroughly cleaned before being laid and kept clean during construction.
   D. All pipe or other material rejected by the Owner and Engineer as being not in conformance with the requirements of the contract shall be removed immediately from the site of the work by the Contractor, and replaced with material which does comply. No additional compensation will be allowed the contractor for replacement of such rejected material.
   E. The laying of pipe on the prepared bedding material shall commence from the lowest point, with the spigot ends pointing in the direction of flow. All pipes shall be laid true to line and grade. They shall be carefully centered so that when laid, they form a sewer with uniform invert.
   F. A pipe plug or bulkhead shall be used whenever pipe laying operations are not in progress as required to protect the pipe ends from foreign material.
   G. Before making pipe joints, all surfaces of the joints shall be clean and dry. Lubricants, primers and adhesives shall be used in accordance with the manufacturer's recommendations. The pipe shall then be placed, fitted and adjoined so as to obtain a watertight joint. In the event that previously laid pipe is disturbed, it shall be removed and re–laid.
   H. The Contractor shall assure proper alignment and grade by the proper use of lasers, batter boards, surveying instruments or other means as may be approved by the Engineer.
   I. All pipe shall be laid without break, upgrade from structure to structure with bell ends of the pipe upgrade. All pipe shall be installed with bedding as specified in these specifications and as shown in the Standard Details of the Project Documents.
   J. Any unsuitable material located at or below the bottom of a pipe to be installed shall be excavated and replaced with compacted granular backfill or compacted INDOT no. 53 stone.
   K. "B" Borrow for structural backfill material shall have a maximum top size of less than 1–1/2" inches and shall be otherwise suitably (as determined by the engineer) graded for the specific application, as indicated in the prevailing specifications.

7. SEWER PIPE TESTING:
   A. GENERAL:
      a. Prior to acceptance, all gravity sanitary sewers, storm sewers and manholes, including service laterals, shall pass a test for leakage. The Contractor shall furnish all labor, materials, and equipment required for making the tests and groundwater level determinations with no extra compensation over and above the specified unit bid prices for the sewers. The tests shall be made at times as selected or approved by the Engineer. Testing shall not be performed until backfilling and compaction are completed. All gravity sewers shall pass one of the three following leakage tests as further specified by this section:
         1) Low pressure air test conforming to the requirements of the latest revision of ASTM C828 and ASTM F1417 as minimum.
         2) Infiltration test with a maximum inward leakage of 200 gallons per inch of pipe diameter per mile per day.
         3) Exfiltration test with a maximum outward leakage of 200 gallons per inch of pipe diameter per mile per day.
      b. The low pressure air test shall be used for the sanitary or storm sewer pipe. Should one or more segments of the sanitary or storm sewer fail the low pressure air test, the Contractor may request approval to perform an exfiltration test to establish whether the 200 gallons per inch of pipe diameter per mile per day is being exceeded.
      c. If measured leakage exceeds the leakage allowance and thereby fails the leakage test, the Contractor shall locate the points of leakage and make necessary repairs so as to reduce the leakage to the permissible amount. The Contractor, at his own expense, shall remove and reconstruct as much of the work as necessary to obtain a test within the allowable leakage limits. Repair methods other than reconstruction must be approved by the Engineer.
      d. Regardless of the outcome of any leakage test, the Contractor shall be responsible for repairing all visible leaks using methods approved by the Engineer.
   B. LOW PRESSURE AIR TEST:
      a. Immediately prior to testing, the pipe shall be cleaned. After cleaning, all pipe outlets shall be plugged. The Contractor must be aware that low–pressure air testing may be dangerous. The Contractor shall review the paragraphs entitled "SAFETY PRECAUTIONS" in ASTM C828 and ASTM F1417 before beginning pressurization of the pipe. The sewer line shall then be slowly pressurized to an internal pressure of 4.0 psig greater than the hydrostatic pressure head created by any groundwater over the pipe (i.e., the height of groundwater above the invert of the pipe, in feet, multiplied by 0.43). Where such internal pressure adjustment would result in a starting pressure greater than 9.0 psig, an infiltration test shall be performed. The method of pressurizing shall be such that the pressure shall be maintained until the temperature of the pipe and the air have equalized but in no case less than five minutes. After the temperature has stabilized, the air supply shall be discontinued and the pressure allowed to drop. When the pressure reaches 3.5 psig (not including additional air pressure required by groundwater), a stopwatch shall be used to record the time it takes for the pressure to drop to 2.5 psig (or a 1 pound pressure drop). If the recorded time is more than the minimum test time as computed using the test procedure formula, the section of pipe shall be considered to have passed the leakage test. If the recorded time is less than the minimum test time, the line shall be considered to have failed the test and shall be inspected for possible leaks and retested upon correction until such time as the line passes the test requirements. All such corrections and retesting shall be done at the Contractor's expense.
      b. The Engineer shall witness and record the results of each pressure test.
   C. INFILTRATION TEST:
      a. An infiltration test shall be used only when approved by the Engineer. For an infiltration test to be performed, the ground water elevation must be at least 2.0 feet above the crown of the upstream pipe. The test shall require cleaning of the line and then plugging the upstream pipe opening with a watertight plug with length equal to or greater than the pipe diameter.
      b. A 90° v–notch weir shall be placed in the downstream manhole of the section of pipe being tested. When performing an infiltration test with a weir, sufficient time shall be allowed for the infiltration to crest the weir and stabilize. This time shall be determined by the Engineer based on the allowable infiltration, the size of the sewer line, the slope of the line, and other pertinent information. In no case shall the time be less than one hour. The Contractor shall measure the head (h) of water flowing over the weir. The measurement must be accurate and taken a minimum distance if 18" or four times the height of "h" upstream of the weir, whichever is greater. The measured infiltration over the weir can be calculated as:

         "q=3240xh25" (where h is in inches and q is in gallons per day)

UNDERGROUND INFRASTRUCTURE INSTALLATION SPECIFICATIONS

      c. Where the infiltration allowances are very small and measurement by weir inaccurate, the leakage measurement shall be made by timing the filling of a container of known volume. The volume collected shall be converted to a 24–hour basis for comparison with specification requirements. If the measured infiltration is less than that allowed, the pipe section shall be considered to have passed the leakage test.
      d. The infiltration test shall be performed by the Contractor at his expense in the presence of the Engineer. All corrections, repairs and retesting shall be done at no extra cost to the Owner.
      e. The Engineer shall witness and record the results of each infiltration test.
   D. EXFILTRATION TEST:
      a. An exfiltration test can be used in lieu of a low pressure air test if approved by the Engineer. Before beginning the exfiltration test, the pipe shall be cleaned. Once cleaned, the downstream pipe outlet shall be sealed at the manhole with watertight plug. The upstream manhole shall then be filled with water to a static level not lower than four (4) feet above the top of the sewer pipe (at its highest point) and not less than four (4) feet higher than the existing ground water table, whichever is greater. In lieu of using the upstream manhole, a standpipe can be used to develop the specified pressure head.
      b. The water shall be allowed to stand for a period long enough to allow water absorption into the pipe (a minimum of 6 hours). After the absorption period, the pipe shall be refilled to the established level and the test begun. After a one hour period, the exfiltrated volume shall be calculated by either measuring the drop in water level in the manhole or measuring the volume of water required to refill the standpipe to the original level, whichever applies. The measured exfiltration rate shall then be calculated and compared with the allowable exfiltration. If the measured exfiltration is less than that allowed, the pipe section shall be considered to have passed the leakage test. Failure to meet the required limits will require correction, repair and retesting of the line at the Contractor's expense.
      c. The Engineer shall witness and record the results of each exfiltration test.
   E. MANDREL TESTING (FLEXIBLE PIPE ONLY)
      a. All flexible (e.g. PVC) sewer main pipe, including live sanitary and storm sewers, shall be subject to a Mandrel test using an approved rigid mandrel with an outside diameter of not less than 95% of the actual inside diameter of the pipe to be tested.
      b. The Mandrel tests shall be made at least 30 days after the pipe has been backfilled and the backfill has been compacted to the approved density. The sewer section being tested shall be cleaned immediately prior to mandrel testing.
      c. The mandrels shall be pulled thru the pipes manually. Mechanical assistance in pulling the mandrel will not be allowed.
      d. Should any test fail to allow the passage of the mandrel thru the pipe, the Contractor shall locate and replace the faulty section of pipe, all at his expense.
      e. Any point repair replacement sections of pipe shall also be mandrel tested, in accordance with the preceding requirements.
      f. The Contractor shall provide all labor and equipment to perform the mandrel test. If live sewers require jetting and cleaning prior to mandrel testing, the contractor shall be responsible to jet and clean the sewer at no increased cost to the Contract.

EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY
   A. Perform excavation, filling, compaction, and grading operations both inside and outside of building, roadway or ditch limits as required for below–grade improvements and to achieve grades and elevations indicated. Provide trenching and backfill for mechanical and electrical work and utilities.
   B. Provide subbase materials, drainage fill, common fill, and structural fill materials for slabs, pavements, and improvements.
   C. Provide suitable fill from off–site if on–site quantities are insufficient or unacceptable, and legally dispose of excess fill off–site.
   D. Provide rock excavation without blasting unless blasting is specifically authorized.

1.2 SUBMITTALS
   A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
   B. Test Reports: Submit for approval test reports, list of materials and gradations proposed for use.

1.3 QUALITY ASSURANCE
   A. Compaction:
      1. Under structures, building slabs, steps, pavements, and walkways, 95 percent maximum density, ASTM D 1557.
      2. Under lawns or unpaved areas, 90 percent maximum density, ASTM D 1557.
      3. Prior to placement of aggregates for roadway subbase stone the Contractor is required to perform a passing proof roll test.
   B. Grading Tolerances Outside Building Lines:
      1. Lawns, unpaved areas, and walks, plus or minus 1–inch.
      2. Pavements, plus or minus ½–inch.
   C. Grading Tolerance for Fill Under Building Slabs: Plus, or minus ½–inch measured with 10–foot straightedge.

PART 2 – PRODUCTS

2.1 MATERIALS
   A. Subbase material: INDOT no. 53 stone or gravel/crushed stone/crushed concrete graded for intended use as subbase for paving materials specified. Slag will not be permitted.
   B. Bedding Course: INDOT No.73 Stone or crushed gravel or stone and natural or crushed sand; with 100 percent passing a 1–inch sieve and not more than 8% passing a No. 200 sieve placed in a trench before laying pipe. Slag will not be permitted.
   C. Borrow Soil: Satisfactory soil imported from off–site for use as fill or backfill.
   D. Drainage fill: Washed gravel or crushed stone, 1/4" to 3/4" size; ASTM C 33, Size 67 or INDOT No. 8 Stone. Slag will not be permitted.
   E. Common fill: Mineral soil substantially free from organic and unsuitable materials, and free from rock or gravel larger than 2" in diameter; 80 percent passing No. 40 sieve and not more than 50 percent passing No. 200 sieve.
   F. Structural fill: Gravel or sandy gravel free of organic and unsuitable materials and within the following gradation limits: 4" sieve, 100 percent finer by weight; 1" sieve, 60 to 100 percent; No. 4 sieve, 25 to 85 percent; No. 20 sieve, 10 to 60 percent; No. 50 sieve, 4 to 35 percent; No. 200 sieve, 0 to 5 percent.
   G. Rip Rap: INDOT Uniform "A", washed limestone or crushed stone, 6" to 9" size, approx. weight 100#/cft.
   H. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

PART 3 – EXECUTION

3.1 INSTALLATION
   A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated as follows:
      1. at Structure: Concrete or compacted structural fill.
      2. elsewhere: Backfill and compact as directed.
   B. Maintain stability of excavations; coordinate shoring and bracing as required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage and do not stockpile materials within drip line of trees to remain.
   C. COMPACTION REQUIREMENTS: Compact materials at the optimum moisture content as determined by ASTM D 1557 by aeration or wetting to the following percentages of maximum dry density:
      1. Structure, Pavement, Walkways: Subgrade and each fill layer to 95% of maximum dry density to suitable depth.
      2. Unpaved Areas: Top 6" of subgrade and each fill layer to 90% maximum dry density.
      3. Backfill shall be compacted to a dry density not less than the following percentage of maximum dry density as determined by the Modified Proctor Test (ASTM D1557):

Usage	Compaction %
Beneath piping for a minimum depth of 18"	95
Under haunches and up to springline of pipe	95
Under pavements and curbs	95
From springline to 1 foot above top of pipe	95
(areas other than under pavement & structures)	

Usage	Compaction %
Adjacent to (or behind) vertical walls	95
In lawn and gravel parking areas	90
Beneath footings and foundation slabs	95

   D. Prior to placing the proposed subbase stone the Contractor shall compact the existing subgrade prior to placing the base courses of aggregate.
   E. Place acceptable materials in layers not more than 8" loose depth for materials compacted by heavy equipment and not more than 4" loose depth for materials compacted by hand equipment to subgrades indicated as follows:
      1. Structural Fill: Use under foundations, slabs on grade in layers as indicated.
      2. Drainage Fill: Use under designated building slabs, at foundation drainage and elsewhere as indicated.
      3. Common Fill: Use under unpaved areas.
      4. Subbase Material: Use under pavement, walks, steps, piping and conduit.
   F. Grade to within 1/2" above or below required subgrade and within a tolerance of 1/2" in 10'.
   G. Protect newly graded areas from traffic and erosion. Recompact and regrade settled, disturbed and damaged areas as necessary to restore quality, appearance, and condition of work.
   H. Control erosion to prevent runoff into sewers, ditches, swales or damage to sloped or surfaced areas.
   I. Control dust to prevent hazards to adjacent properties and vehicles. Immediately repair or remedy damage caused by dust including air filters in equipment and vehicles. Clean soiled surfaces.
   J. Dispose of waste and unsuitable materials, including dewatering, off–site in a legal manner.
   K. Excavated material used to fill the discontinued ditch along S. Mineral Springs and the swale along Marquette Road shall be clean material free of debris, limbs, brush, vegetative material, etc...

DRAFT - 30% PRELIMINARY DESIGN FOR OWNER REVIEW

haas & associates L.L.C.
CONSULTING ENGINEERS
www.HaasLLC.com
526 Franklin Street
Michigan City, IN 46360
Phone: 219-872-9407

CERTIFICATION

DRAFT
(NOT CERTIFIED)

PROJECT NAME, OWNER, & LOCATION

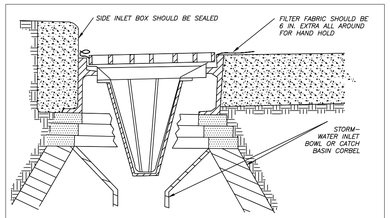
Long Beach Fire Station (2023)
Owner: Town Of Long Beach, Indiana
Location: 2400 Centre Court, Long Beach, IN 46360

REVISIONS

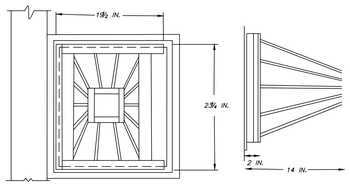
DATE ISSUED:	DRAWN BY
TBD (PLOTTED: 11.29.2022)	SNO

SHEET TITLE
STANDARD SPECIFICATIONS - 2

SHEET NO.
C-3.1



CROSS-SECTIONAL VIEW OF A BASKET CURB INLET PROTECTION.



TOP VIEW (LEFT) AND FRONT VIEW (RIGHT) OF A BASKET CURB INLET PROTECTION.

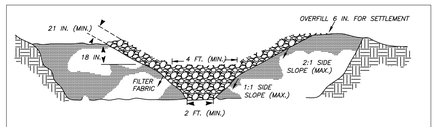
PURPOSE: TO PREVENT EXCESSIVE SEDIMENT FROM ENTERING STORM SEWERS AT CURB INLETS, ALLOWING FULL USE OF THE STORM DRAIN SYSTEM DURING CONSTRUCTION PERIOD.

REQUIREMENTS:
- BASKET: FABRICATED METAL WITH TOP WIDTH-LENGTH DIMENSIONS SUCH THAT THE BASKET FITS INTO THE INLET WITHOUT GAPS, AND LINE IT WITH GEOTEXTILE FABRIC FILTRATION.

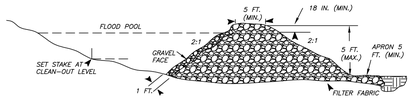
INSTALLATION:
1. INSTALL BASKET CURB INLET PROTECTIONS AS SOON AS INLET BOXES ARE INSTALLED IN A NEW DEVELOPMENT OR BEFORE LAND DISTURBING ACTIVITIES BEGIN IN A STABILIZED AREA.
2. REMOVE THE GRATE, AND PLACE THE BASKET IN THE INLET.
3. REPLACE THE INLET GRATE, WHICH ALSO SERVES TO ANCHOR THE FABRIC.

MAINTENANCE:
1. INSPECT AFTER EACH STORM EVENT.
2. REMOVE BUILT-UP SEDIMENT AND REPLACE THE GEOTEXTILE FABRIC AFTER EACH STORM EVENT.

BASKET CURB INLET PROTECTION DETAIL



EARTH EMBARKMENT AND STONE OUTLET SECTION OF A TEMPORARY SEDIMENT TRAP.



PURPOSE: TO PREVENT OFFSITE SEDIMENTATION BY TRAPPING SEDIMENT AT DESIGNATED LOCATIONS ACCESSIBLE FOR CLEANOUT.

DESIGN: REQUIREMENTS:
- WIDTH: 25' (MIN.)
- LENGTH: 40' (MIN.)
- DEPTH: 3.5' (MIN.)
- SPILLWAY WIDTH: 6'
- SPILLWAY HEIGHT: 3.5'
- SPILLWAY SIDE SLOPE: 1:1 (MAX.) OR AS DETENTION BASINS DESIGN EMBANKMENT SIDE SLOPES.
- SPILLWAY EMBANKMENT HEIGHT: 5'
- EMBANKMENT TOP WIDTH: 5'
- EMBANKMENT SIDE SLOPES: 2:1 (MAX.) OR AS DETENTION BASINS DESIGN EMBANKMENT SIDE SLOPES.

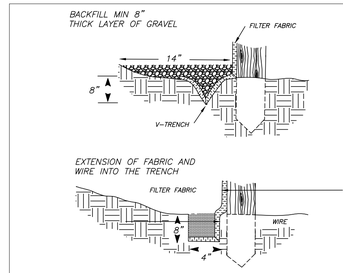
INSTALLATION:

EMBANKMENT:
1. CLEAR, GRUB, AND STRIP ALL VEGETATION AND ROOT MAT FROM THE EMBANKMENT AREA.
2. USING STABLE MINERAL SOIL FREE OF ROOTS, ROCKS, BRUSH, AND DEBRIS, PLACE FILL IN 9" LIFTS.
3. COMPACT EACH LIFT SO THE SIDE SLOPES ORE 2:1
4. OVERFILL THE EMBANKMENT TO 6" ABOVE THE DESIGN ELEVATION TO ALLOW FOR SETTLING.

OUTLET SECTION:
1. EXCAVATE A TRAPEZOIDAL STONE OUTLET SECTION FROM THE COMPACTED EMBANKMENT.
2. INSTALL GEOTEXTILE FABRIC, EXTENDING IT UP THE SIDES TO THE TOP OF THE EMBANKMENT.
3. PLACE STONE TO THE LINES AND GRADES, WORKING SMALLER STONES INTO VOIDS TO ACHIEVE A DENSE MASS.
4. KEEP BASE OF THE STONE OUTLET SECTION 2' THICK THROUGH LEVEL SECTION AND THE DOWNSTREAM FACE OF THE EMBANKMENT.
5. EXTEND THE OUTLET APRON BELOW THE TOE OF THE DAM ON LEVEL GRADE UNTIL STABLE CONDITIONS ARE REACHED. (5' MINIMUM)
6. MAKE THE EDGES AND END OF THE STONE APRON LIE FLUSH WITH THE SURROUNDING GROUND. (NO OVERFALL SHOULD EXIST.)
7. COVER THE INSIDE FACE OF THE STONE OUTLET SECTION WITH A 1' LAYER IN INDOT CA NO. 5 STONE.
8. STABILIZE THE EMBANKMENT. (I.E. SEED AND MULCH)

MAINTENANCE:
1. INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH STORM EVENT, AND IMMEDIATELY REPAIR ANY EROSION AND PIPING HOLES.
2. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH.
3. REPLACE SPILLWAY GRAVEL FACING IF CLOGGED.
4. INSPECT VEGETATION AND RE-SEED IF NECESSARY.
5. CHECK THE SPILLWAY DEPTH PERIODICALLY TO ENSURE A MINIMUM OF 1.5' DEPTH FROM THE LOWEST POINT OF THE SETTLED EMBANKMENT TO THE HIGHEST POINT OF THE SPILLWAY CREST, FILL LOW AREAS TO MAINTAIN DESIGN ELEVATION.
6. WHEN WORK AREA HAS BEEN STABILIZED, REMOVE SEDIMENT TRAP EMBANKMENT, AND FILL BASIN AREA TO BLEND WITH THE NATURAL GROUND.

SEDIMENT TRAP DETAIL



PURPOSE: TO RETAIN SEDIMENT FROM SMALL SLOPING DISTURBED AREAS BY REDUCING THE VELOCITY OF SHEET FLOW.

REQUIREMENTS:
- TRENCH: 8" MINIMUM DEPTH, FLAT BOTTOM OR V-SHAPED, FILLED WITH COMPACTED SOIL OR GRAVEL TO BURY LOWER PORTION OF SUPPORT WIRE AND/OR FENCE FABRIC.
- SUPPORT POSTS: 2" X 2" HARDWOOD POSTS SET AT LEAST 1 FOOT DEEP.
- SPACING OF POSTS: 8 FOOT MAXIMUM IF FENCE SUPPORTED BY WIRE, OTHERWISE 6 FOOT PER EXTRA-STRENGTH FABRIC WITHOUT WIRE BACKING.
- FENCE HEIGHT: A 3 FEET MINIMUM OR HIGH ENOUGH SO DEPTH OF IMPOUNDED WATER DOES NOT EXCEED 1.5 FEET AT ANY POINT ALONG FENCE LINE.
- SUPPORT WIRE (OPTIONAL): 14 GAUGE, 6" MESH WIRE FENCE. (NEEDED IF USING STANDARD-STRENGTH FABRIC.)
- FENCE FABRIC: WOVEN OR NON-WOVEN GEOTEXTILE FABRIC WITH SPECIFIED FILTERING EFFICIENCY AND TENSILE STRENGTH AND CONTAINING UV INHIBITORS AND STABILIZERS TO ENSURE 6 MONTH MINIMUM LIFE AT TEMPERATURES 9-120 DEGREES F.

INSTALLATION:
1. ALONG THE ENTIRE INTENDED FENCE LINE, MAINTAIN CONTOUR AS MUCH AS POSSIBLE, DIG AN 8" DEEP FLAT BOTTOM OR V-SHAPED TRENCH.
2. ON THE DOWN SLOPE SIDE OF THE TRENCH, DRIVE THE POST AT LEAST 1 FOOT INTO THE GROUND. (NOTE: IF THE FENCE HAS PRE-ATTACHED POSTS OR STAKE, DRIVE THEM DEEP ENOUGH SO THE FABRIC IS SATISFACTORILY IN THE TRENCH PER STEP 6.)
3. FASTEN SUPPORT WIRE FENCE TO THE UP SLOPE SIDE OF THE POSTS, EXTENDING IT 8" INTO TRENCH. (USE ONLY IF REQUIRED BY MANUFACTURER.)
4. RUN A CONTINUOUS LENGTH OF GEOTEXTILE FABRIC ALONG UP SLOP SIDE OF POSTS.
5. IF A JOINT IS NECESSARY, NAIL THE OVERLAP TO THE NEAREST POST WITH A WOOD LATH.
6. PLACE THE BOTTOM 1' OF FABRIC IN THE 8" DEEP TRENCH, EXTENDING THE REMAINING 4" OF FABRIC TOWARD THE UP SLOPE SIDE.
7. BACKFILL THE TRENCH WITH COMPACTED EARTH.

MAINTENANCE:
1. INSPECT SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT.
5. AFTER WATERSHED HAS BEEN STABILIZED, REMOVE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND STABILIZE.

SILT FENCE DETAIL

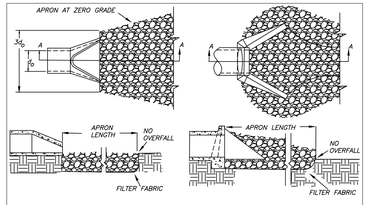


EXHIBIT 1002B: PIPE OUTLET APRONS FOR A CHANNEL (LEFT) THAT IS NOT WELL DEFINED AND (RIGHT) THAT IS WELL DEFINED. (SOURCE: INDIANA EROSION CONTROL HANDBOOK)

PURPOSE: TO PROTECT SLOPES, STREAM BANKS AND CHANNELS, WHICH ARE SUBJECT TO EROSION. WHERE RUN OFF VELOCITY IS GREAT, AT THE OUTLET PIPE OF A DETENTION BASIN, CHANNEL OR CULVERT.

DESIGN REQUIREMENTS:
- ROCK: HARD, ANGULAR, WEATHER-RESISTANT AND WELL GRADED STONE, THE LARGEST PIECES SHOULD NOT EXCEED TWO TIMES THE SPECIFIED STONE DIAMETER.
- THICKNESS: 12" MINIMUM OR TWO TIMES THE SPECIFIED STONE DIAMETER, WHICHEVER IS GREATER.
- FILTER: UNDER PERMANENT RIPRAP INSTALL GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION.

INSTALLATION:
SUBGRADE PREPARATION:
1. REMOVE BRUSH, TREES, STUMPS, AND OTHER DEBRIS.
2. EXCAVATE ONLY DEEP ENOUGH FOR BOTH FILTER AND RIPRAP.

FILTER PLACEMENT:
1. PLACE GEOTEXTILE FABRIC ON A SMOOTHED FOUNDATION, OVERLAP THE EDGES AT LEAST 12" AND SECURE WITH ANCHOR PINS SPACED EVERY 3 FEET ALONG THE OVERLAP.
2. IF FABRIC IS DAMAGED, REMOVE THE RIPRAP AND REPAIR DAMAGED AREA BY 12 INCHES.

RIPRAP PLACEMENT:
1. IMMEDIATELY AFTER INSTALLING THE FILTER, ADD THE RIPRAP TO FULL THICKNESS IN ONE OPERATION TO THE DESIGN ELEVATION, AND EXTEND RIPRAP TO THE TOP OF THE BANK.
2. PLACE SMALLER ROCK IN VOIDS TO FORM A DENSE, UNIFORM, WELL-GRADED MASS.
3. BLEND THE RIPRAP SMOOTHLY TO THE SURROUNDING GRADE.
4. STABILIZE ALL DISTURBED AREAS IMMEDIATELY FOLLOWING INSTALLATION.

MAINTENANCE:
1. INSPECT PERIODICALLY FOR DISPLACED ROCK MATERIAL, SLUMPING, AND EROSION AT EDGES, ESPECIALLY DOWNSTREAM OR DOWN SLOPE

ROCK CHUTE DETAIL

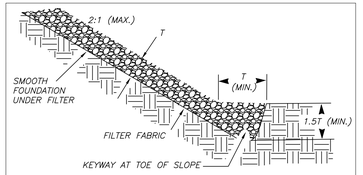


EXHIBIT 510B: CONSTRUCTION OF A RIPRAP BANK WITH TOE PROTECTION (SOURCE: INDIANA EROSION CONTROL HANDBOOK)

PURPOSE: TO PROTECT SLOPES, STREAM BANKS AND CHANNELS, WHICH ARE SUBJECT OR EROSION BY WATER.

DESIGN REQUIREMENTS:
- ROCK: HARD, ANGULAR, WEATHER-RESISTANT AND WELL GRADED STONE, THE LARGEST PIECES SHOULD NOT EXCEED TWO TIMES THE SPECIFIED STONE DIAMETER.
- THICKNESS: TWO TIMES THE SPECIFIED STONE DIAMETER BUT NOT GREATER THAN 3 INCHES.
- FILTER: UNDER PERMANENT RIPRAP INSTALL GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION.

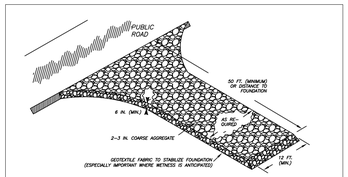
INSTALLATION:
SUBGRADE PREPARATION:
1. REMOVE BRUSH, TREES, STUMPS, AND OTHER DEBRIS.
2. EXCAVATE ONLY DEEP ENOUGH FOR BOTH FILTER AND RIPRAP.
3. CUT A KEYWAY IN STABLE MATERIAL AT THE BASE OF THE SLOPE TO REINFORCE THE TOE.

FILTER PLACEMENT:
1. PLACE GEOTEXTILE FABRIC ON A SMOOTHED FOUNDATION, OVERLAP THE EDGES AT LEAST 12 INCHES AND SECURE WITH ANCHOR PINS SPACED EVERY 3 FEET ALONG THE OVERLAP.

RIPRAP PLACEMENT:
1. IMMEDIATELY AFTER INSTALLING THE FILTER, ADD THE RIPRAP TO FULL THICKNESS IN ONE OPERATION.
2. IF FABRIC IS DAMAGED, REMOVE THE RIPRAP AND REPAIR BY ADDING ANOTHER LAYER OF FABRIC, OVERLAPPING THE DAMAGED AREA BY 12 INCHES.
3. PLACE SMALLER ROCK IN VOIDS TO FORM A DENSE, UNIFORM, WELL-GRADED MASS.

MAINTENANCE:
1. INSPECT PERIODICALLY FOR DISPLACED ROCK MATERIAL, SLUMPING, AND EROSION AT EDGES, ESPECIALLY DOWNSTREAM OR DOWN SLOPE

RIPRAP DETAIL



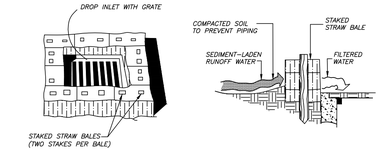
PURPOSE: TO PROVIDE A STABLE ENTRANCE/EXIT CONDITION FROM THE CONSTRUCTION SITE, AND TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADS.

DESIGN REQUIREMENTS:
- WIDTH: 12 FEET MINIMUM OR FULL WITH OF ENTRANCE
- LENGTH: 50 FEET MINIMUM
- MATERIAL: 2-3 INCH DIAMETER WASHED STONE (INDOT CA NO. 2), WITH WOVEN GEOTEXTILE THICKNESS: 6 INCH MINIMUM

INSTALLATION:
1. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.
2. INSTALL PIPE UNDER THE STONE IF NEEDED TO PROVIDE PROPER PUBLIC ROAD DRAINAGE.
3. INSTALL GEOTEXTILE FABRIC ON THE GRADED FOUNDATION AREA PRIOR TO STONE PLACEMENT.
4. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE TO SEDIMENT TRAP.

MAINTENANCE:
1. INSPECT ENTRANCE PAD FOR SEDIMENT DEPOSITS WEEKLY AND AFTER STORM EVENTS OR HEAVY USE.
2. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOP DRESS WITH CLEAN STONE AS NEEDED.
4. REMOVE MUD AND SEDIMENT RACKED OR WASHED ONTO PUBLIC ROAD BY BRUSHING OR SWEEPING. NO FLUSHING OF SEDIMENT OFF THE STREET.
5. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE DETAIL



PURPOSE: TO TRAP SEDIMENT AT THE INLET TO A STORM DRAIN, ALLOWING FULL USE OF THE DRAIN SYSTEM DURING THE CONSTRUCTION PERIOD.

DESIGN REQUIREMENTS:
- BALE DIMENSIONS: 14 INCH X 18 INCH X 36 INCH
- HEIGHT OF BALES ABOVE INLET: 14 INCHES
- ANCHORING: TWO 36-INCH LONG (MINIMUM) STEEL REBARS OR 2X2 INCH HARDWOOD STAKES DRIVEN THROUGH EACH BALE.

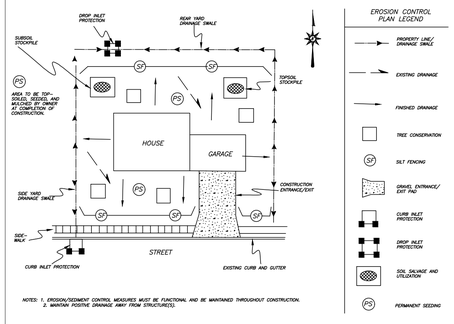
INSTALLATION:
1. TO REDUCE BY-PASS FLOW, ENSURE THAT THE TOP OF THE BALES WILL BE AT LEAST 6 IN. BELOW GROUND ELEVATION ON THE DOWN SLOPE SIDE OF THE INLET. THIS MAY REQUIRE CONSTRUCTING BELOW THE INLET A TEMPORARY DIKE (COMPACTED TO 6 IN. HIGHER THAN THE TOP OF THE BALES).
2. PLACE THE BALES LENGTHWISE IN THE TRENCH SO THE BINDINGS ARE ORIENTED AROUND THE SIDES, RATHER THAN TOP AND BOTTOM, TO MINIMIZE DETERIORATION OF THE BINDINGS.
3. ALLOW THE BALES TO OVERLAP AT THE CORNERS, AND ABUT THEM TIGHTLY AGAINST EACH OTHER.
4. ANCHOR THE BALES BY DRIVING TWO 36-INCH LONG STEEL REBARS OR 2.2-IN. HARDWOOD STAKES THROUGH EACH BALE UNTIL NEARLY FLUSH WITH THE TOP. DRIVE THE FIRST STAKE AT AN ANGLE TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
5. CHINK (I.E. TIGHTLY WEDGE) STRAW INTO ANY GAPS BETWEEN BALES TO PREVENT SEDIMENT-LADEN WATER FROM FLOWING DIRECTLY INTO THE INLET.

MAINTENANCE:
1. INSPECT THE DROP INLET PROTECTION AFTER EACH STORM EVENT, AND MAKE NEEDED REPAIRS IMMEDIATELY.
2. REMOVE SEDIMENT FROM THE POOL AREA TO ENSURE ADEQUATE RUNOFF STORAGE FOR THE NEXT RAIN, TAKING CARE TO NOT DAMAGE OR UNDERCUT THE BALES.
3. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ALL BALES, CONSTRUCTION MATERIAL, AND SEDIMENT, AND DISPOSE OF PROPERLY, GRADE THE DISTURBED AREA TO THE ELEVATION OF THE TOP OF THE INLET AND STABILIZE.

STRAW BALE DROP INLET PROTECTION DETAIL

GENERAL SHEET NOTES

1. IN CASE OF A DISCREPANCY BETWEEN THE DETAILS AND REQUIREMENTS SHOWN HEREIN AND THE DETAILS AND REQUIREMENTS CONTAINED WITHIN SPECIFICATION "SECTION 205 - STORMWATER MANAGEMENT", THE MORE STRINGENT, CONSERVATIVE (IN TERMS OF PREVENTING EROSION) MEASURES SHALL GOVERN.
2. ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES CALLED FOR IN THE PLANS AND SPECIFICATIONS SHALL ALSO BE IN ACCORDANCE WITH THE FOLLOWING INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD DRAWINGS AS WELL AS THE SPECIFICATIONS.
   - E 205-TECD-02 (TEMPORARY INLET PROTECTION, FILTER SOCK)
   - E 205-TECD-03 (TEMPORARY INLET PROTECTION, GRAVEL RING)
   - E 205-TECD-04 (TEMPORARY INLET PROTECTION FILTER BAG INSERT)
   - E 205-TECD-05 (TEMPORARY CURB INLET PROTECTION)
   - E 205-TECD-06 (TEMPORARY CHECK DAM, REVETMENT RIPRAP)
   - E 205-TECD-07 (TEMPORARY CHECK DAM, TRAVERSABLE, LOW PROFILE)
   - E 205-TECD-08 (TEMPORARY CHECK DAM, TRAVERSABLE)
   - E 205-TECD-09 (TEMPORARY SEDIMENT TRAP)
   - E 205-TECD-10 (PERIMETER PROTECTION, FILTER SOCK)
   - E 205-TECD-11 (PERIMETER PROTECTION, SILT FENCE)
   - E 205-TECD-12 (TEMPORARY EROSION CONTROL PERIMETER CONSTRUCTION ENTRANCE)



NOTES: 1. EROSION/SEDIMENT CONTROL MEASURES MUST BE FUNCTIONAL AND BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURE(S).

SAMPLE EROSION/SEDIMENT CONTROL PRACTICE PLAN FOR A TYPICAL ONE- OR TWO-FAMILY DWELLING UNDER CONSTRUCTION

STEP 1 - EVALUATE THE SITE
- A. BEFORE CONSTRUCTION, EVALUATE THE ENTIRE SITE, MARKING FOR PROTECTION ANY IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS TO BE PRESERVED, ON-SITE SEPTIC SYSTEM ABSORPTION FIELDS, AND VEGETATION SUITABLE FOR FILTER STRIPS ESPECIALLY IN PERIMETER AREAS.
- B. IDENTIFY VEGETATION TO BE SAVED.
- C. SELECT AND IDENTIFY THE TREES, SHRUBS, AND OTHER VEGETATION THAT YOU WANT TO SAVE (SEE "VEGETATIVE FILTER STRIPS" UNDER STEP 2).
- D. PROTECT TREES AND SENSITIVE AREAS.
- E. TO PREVENT ROOT DAMAGE, DO NOT GRADE, BURN, PLACE SOIL PILES, OR PARK VEHICLES NEAR TREES OR IN AREAS MARKED FOR PRESERVATION.
- F. PLACE PLASTIC MESH OR SNOW FENCE BARRIERS AROUND THE TREES' DRIPLINE TO PROTECT THE AREA BELOW THEIR BRANCHES.
- G. PLACE A PHYSICAL BARRIER, SUCH AS PLASTIC FENCING, AROUND THE AREA DESIGNATED FOR A SEPTIC SYSTEM ABSORPTION FIELD (IF APPLICABLE).

STEP 2 - INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS
- A. IDENTIFY THE AREAS WHERE SEDIMENT-LADEN RUNOFF COULD LEAVE THE CONSTRUCTION SITE, AND INSTALL PERIMETER CONTROLS TO MINIMIZE THE POTENTIAL FOR OFF-SITE SEDIMENTATION. IT'S IMPORTANT THAT PERIMETER CONTROLS ARE IN PLACE BEFORE ANY OTHER EARTH-MOVING ACTIVITIES BEGIN.
- B. PROTECT DOWN-SLOPE AREAS
- C. WITH VEGETATIVE FILTER STRIPS
- D. ON SLOPES OF LESS THAN 6 PERCENT, PRESERVE A 20 - TO 30 - FOOT WIDE VEGETATIVE BUFFER STRIP AROUND THE PERIMETER OF THE PROPERTY, AND USE IT AS A FILTER STRIP FOR TRAPPING SEDIMENT.
- E. DO NOT MOW FILTER STRIP VEGETATION SHORTER THAN 4 INCHES.
- F. WITH SILT FENCE
- G. USE SILT FENCING ALONG THE PERIMETER OF THE LOT'S DOWNSLOPE SIDE(S) TO TRAP SEDIMENT (SEE EXHIBIT #3).
- H. INSTALL GRAVEL DRIVE
- I. RESTRICT ALL LOT ACCESS TO THIS DRIVE TO PREVENT VEHICLES FROM TRACKING MUD ONTO ROADWAYS (SEE EXHIBIT #4).
- J. PROTECT STORM SEWER INLETS
- K. PROTECT NEARBY STORM SEWER CURB INLETS WITH STONE-FILLED OR GRAVEL-FILLED GEOTEXTILE BAGS (SEE EXHIBIT #1) OR EQUIVALENT MEASURES BEFORE DISTURBING SOIL.
- L. PROTECT ON-SITE STORM SEWER DROP INLETS WITH SILT FENCE MATERIAL (SEE EXHIBIT #2), STRAW BALES, OR EQUIVALENT MEASURES BEFORE DISTURBING SOIL.

STEP 3 - PREPARE THE SITE FOR CONSTRUCTION
- A. PREPARE THE SITE FOR CONSTRUCTION AND FOR INSTALLATION OF UTILITIES. MAKE SURE ALL CONTRACTORS (ESPECIALLY THE EXCAVATING CONTRACTOR) ARE AWARE OF AREAS TO BE PROTECTED.
- B. SALVAGE AND STOCKPILE THE TOPSOIL/SUBSOIL
- C. REMOVE TOPSOIL (TYPICALLY THE UPPER 4 TO 6 INCHES OF SOIL MATERIAL) AND STOCKPILE.
- D. REMOVE SUBSOIL AND STOCKPILE SEPARATELY FROM THE TOPSOIL.
- E. LOCATE THE STOCKPILES AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, STREAM, LAKE, WETLAND, DITCH, OR DRAINAGEWAY.
- F. IMMEDIATELY AFTER STOCKPILING, TEMPORARY-SEED THE STOCKPILES WITH ANNUAL RYE OR WINTER WHEAT AND/OR PLACE SEDIMENT BARRIERS AROUND THE PERIMETER OF THE PILES.

STEP 4 - BUILD THE STRUCTURE(S) AND INSTALL THE UTILITIES
- A. CONSTRUCT THE HOME AND INSTALL THE UTILITIES; ALSO INSTALL THE SEWAGE DISPOSAL SYSTEM AND DRILL THE WATER WELL (IF APPLICABLE); THEN CONSIDER THE FOLLOWING:
- B. INSTALL DOWNSPOUT EXTENDERS
- C. ALTHOUGH NOT REQUIRED, DOWNSPOUTS EXTENDERS ARE HIGHLY RECOMMENDED AS A MEANS OF PREVENTING LOT EROSION FROM ROOF RUNOFF.
- D. ADD THE EXTENDERS AS SOON AS THE GUTTERS AND DOWNSPOUTS ARE INSTALLED (SEE EXHIBIT #5).
- E. BE SURE THE EXTENDERS HAVE A STABLE OUTLET, SUCH AS THE STREET, SIDEWALK, OR A WELL VEGETATED AREA.

STEP 5 - MAINTAIN THE CONTROL PRACTICES
- A. MAINTAIN ALL EROSION AND SEDIMENT CONTROL PRACTICES UNTIL CONSTRUCTION IS COMPLETED AND THE LOT IS STABILIZED.
- B. INSPECT THE CONTROL PRACTICES A MINIMUM OF TWICE A WEEK AND AFTER EACH STORM EVENT, MAKING ANY NEEDED REPAIRS IMMEDIATELY.
- C. TOWARD THE END OF EACH WORK DAY, SWEEP OR SCRAPE UP ANY SOIL TRACKED ONTO ROADWAYS. DO NOT FLUSH AREAS WITH WATER.
- D. BY THE END OF THE NEXT WORK DAY AFTER A STORM EVENT, CLEAN UP ANY SOIL WASHED OFF-SITE.

STEP 6 - REVEGETATE THE BUILDING SITE
- A. IMMEDIATELY AFTER ALL OUTSIDE CONSTRUCTION ACTIVITIES ARE COMPLETED, STABILIZE THE LOT WITH SOD, SEED, AND/OR MULCH.
- B. REDISTRIBUTE THE STOCKPILED SUBSOIL AND TOPSOIL
- C. SPREAD THE STOCKPILED SUBSOIL TO ROUGH GRADE.
- D. SPREAD THE STOCKPILED TOPSOIL TO A DEPTH OF 4 TO 6 INCHES OVER ROUGH-GRADED AREAS.
- E. FERTILIZE AND LIME ACCORDING TO SOIL TEST RESULTS OR RECOMMENDATIONS OF A SEED SUPPLIER OR A PROFESSIONAL LANDSCAPING CONTRACTOR.
- F. SEED OR SOD BARE AREAS
- G. CONTACT LOCAL SEED SUPPLIERS OR PROFESSIONAL LANDSCAPING CONTRACTORS FOR RECOMMENDED SEEDING MIXTURES AND RATES.
- H. FOLLOW RECOMMENDATIONS OF A PROFESSIONAL LANDSCAPING CONTRACTOR FOR INSTALLATION OF SOD.
- I. WATER NEWLY SEEDED/SODDED AREAS EVERY DAY OR TWO TO KEEP THE SOIL MOIST. LESS WATERING IS NEEDED ONCE GRASS IS 2 INCHES TALL.
- J. MULCH NEWLY SEEDED AREAS
- K. SPREAD STRAW MULCH ON NEWLY SEEDED AREAS, USING 1 ½ TO 2 BALES OF STRAW PER 1,000 SQUARE FEET.
- L. ON FLAT OR GENTLY SLOPING LAND, ANCHOR THE MULCH BY CRIMPING IT 2 TO 4 INCHES INTO THE SOIL. ON STEEP SLOPES, ANCHOR THE MULCH WITH NETTING OR TACKIFIERS. AN ALTENATIVE TO ANCHORED MULCH WOULD BE THE USE OF EROSION CONTROL BLANKETS.

STEP 7 - REMOVE REMAINING TEMPORARY CONTROL MEASURES
- A. ONCE THE SOD AND/OR VEGETATION IS WELL ESTABLISHED, REMOVE ANY REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES, SUCH AS:
- B. DOWNSPOUT EXTENDERS. (OR SHORTEN TO OUTLET ONTO THE VEGETATED AREAS, ALLOWING FOR MAXIMUM INFILTRATION).
- C. STORM SEWER INLET PROTECTION MEASURES.

STORMWATER MANAGEMENT SEQUENCING DETAIL

DRAFT - 30% PRELIMINARY DESIGN FOR OWNER REVIEW

haas & associates CONSULTING ENGINEERS
www.HaasLLC.com
526 Franklin Street
Michigan City, IN 46360
Phone: 219-872-9407

CERTIFICATION

DRAFT (NOT CERTIFIED)

PROJECT NAME, OWNER, & LOCATION

Long Beach Fire Station (2023)

Owner: Town Of Long Beach, Indiana
Location: 2400 Centre Court, Long Beach, IN 46360

REVISIONS

DATE ISSUED: TBD (PLOTTED: 11.29.2022)

DRAWN BY: SNO

SHEET TITLE

EROSION CONTROL DETAILS

SHEET NO.

C-4.0

Published from AutoCAD by: RYAN LAUGHLIN
Plot Date & Time: Tuesday, November 29, 2022 2:46:12 PM
File Location: P:\2021\06 - Proposals Pending or Not Accepted\2023\XXX_LBFS\08 - Design Analysis\01-ACAD\3-Production\PRO_Erosion Control Details.dwg

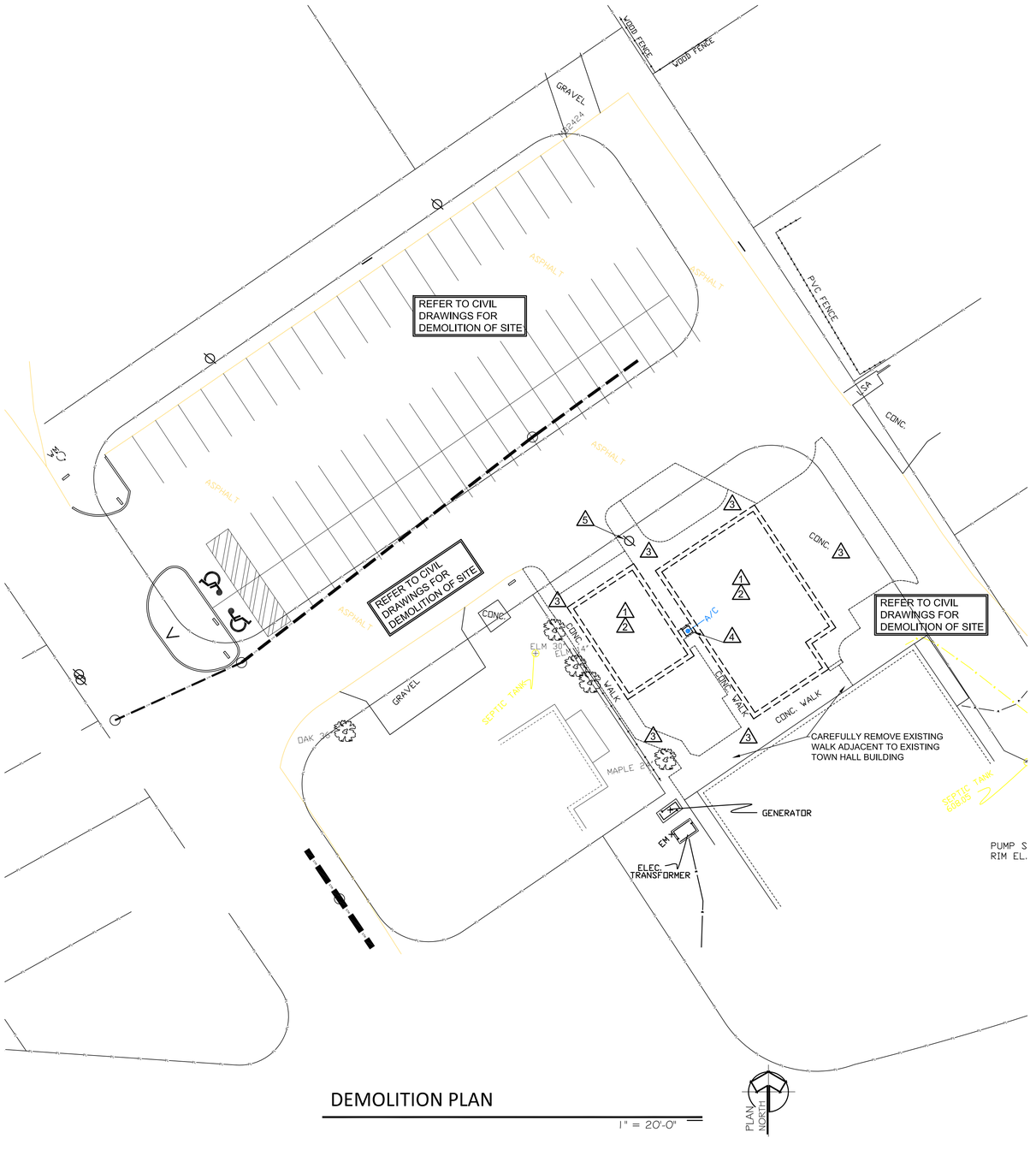
GENERAL NOTES FOR DEMOLITION

(ALL TRADES)

1. WHERE WALLS ARE REMOVED OR OPENINGS CUT IN WALLS OR FLOORS/CEILINGS, REMOVE AND/OR CAP (IN CONJUNCTION WITH APPROPRIATE TRADE) ALL ELECTRICAL CONDUIT, OUTLETS, BOXES & WIRING, AND DUCTWORK AS REQUIRED. ALSO REFER TO MECHANICAL & ELECTRICAL DRAWINGS. RECONNECT NEW ELECTRIC OUTLETS TO NEW CIRCUITS AS SHOWN ON PLANS.
2. WHERE FINISH FLOOR IS REMOVED OR CUT, PATCH & LEVEL EXISTING FLOOR AS REQUIRED FOR NEW FLOOR FINISH.
3. WHERE EXISTING WALLS ARE CUT BACK OR REMOVED, SAW-CUT JOINTS AS REQUIRED. CUTS SHALL BE PLUMB AND TRUE AND AT RIGHT ANGLES TO BUILDING SURFACES.
4. CONTRACTORS SHALL FIELD VERIFY EXISTING DIMENSIONS & CONDITIONS AND REPORT ANY INCONSISTENCIES TO ARCHITECT.
5. COMPLY W/IOSHA & LOCAL REQUIREMENTS FOR BRACING, SHORING PUBLIC BARRICADES, ETC. CONSULT WITH TOWN OF CHESTERTON WHEN BARRICADING OR WORKING ON TOWN STREETS, WALKS OR RIGHT-OF-WAYS.
6. CONTRACTOR SHALL PROVIDE DUMPSTER & CLEANUP ON A DAILY BASIS. DO NOT INTERFERE WITH PUBLIC SIDEWALKS, ETC.
7. IF ASBESTOS BEARING MATERIALS ARE ENCOUNTERED, IMMEDIATELY NOTIFY OWNER, WHO WILL HAVE THOSE MATERIALS PROPERLY REMOVED & DISPOSED OF PER IOSHA & EPA RULES & REGULATIONS.
8. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS & METHODS OF DEMOLITION, PUBLIC SAFETY AND WORK RELATED SAFETY PROGRAMS THERETO.

SPECIFIC DEMOLITION NOTES

1. REMOVE EXISTING BUILDING IN ITS ENTIRETY (CAP ALL UTILITIES AS REQ'D. FOR REUSE IN NEW BUILDING)
2. REMOVE EXISTING INTERIOR STUD PARTITION, FULL HT. INCL. BORROW LIGHTS, AND REMOVE ALL ELECTRICAL CONDUIT, OUTLETS, BOXES & WIRING AS REQ'D.
3. REMOVE EXISTING CONCRETE AS NEEDED FOR NEW BUILDING AND GRADES - REFER TO CIVIL DRAWINGS
4. DISCONNECT & REMOVE EXISTING A/C UNIT IN ITS ENTIRETY
5. COORDINATE WITH COUNTY TO RELOCATE EXISTING SIREN AS REQ'D. WITH THESE PLANS



DEMOLITION PLAN

1" = 20'-0"

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HOLLADAY PROPERTIES
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Phone: 219.841.6416
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PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL LONG BEACH, IN

REVISIONS

11/11/22	**30% FLOOR PLAN**
11/30/22	**30% DEVELOPMENT SET**

DATE **11/30/2022**

DRAWN BY **LAS**

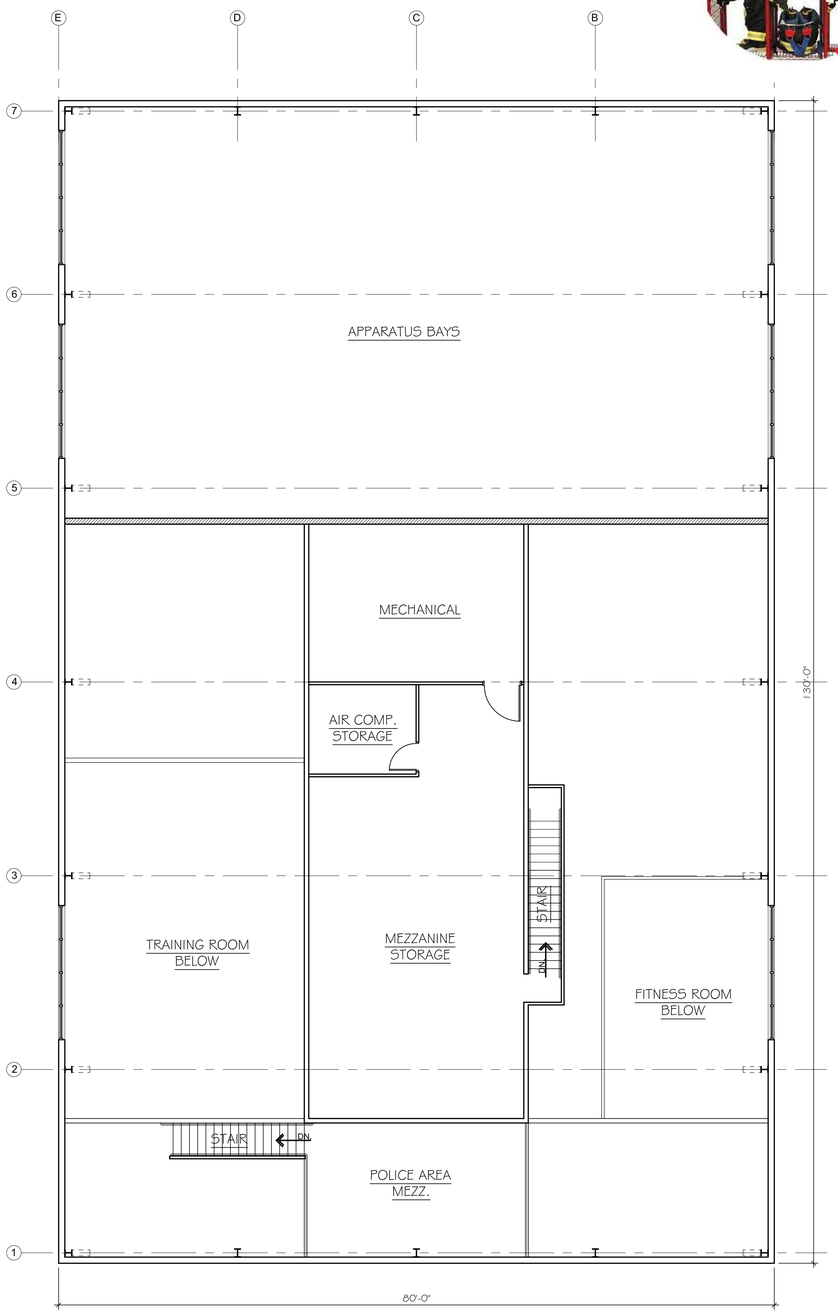
SHEET TITLE **DEMOLITION PLAN & NOTES**

SHEET NO. **A0.1**

GENERAL NOTES

1. ALL DIMENSIONS IN PLAN VIEW AND ELEVATION ARE TAKEN FROM THE FACE OF STUDS TO THE FACE OF MASONRY UNIT, CONCRETE, OR CENTER LINE OF COLUMN, UNLESS NOTED OTHERWISE.
2. TYPE "X" DRYWALL SHALL BE USED THROUGHOUT.
3. PROVIDE 18" MINIMUM ADA REQUIRED CLEARANCE ADJACENT TO STRIKE OF DOOR.
4. ALL WALLS NOT FULLY EXTENDED TO DECK AND/OR ROOF ABOVE, SHALL BE DIAGONALLY BRACED FROM TOP OF WALL TO DECK AND/OR ROOF ABOVE.
5. UNLESS NOTED OTHERWISE, DELETE DRYWALL AND SUBSTITUTE WATER RESISTANT DRYWALL AT ALL WALLS COMMON TO WATER CLOSETS, URINALS, LAVATORIES, SINKS AND SHAFTS.
6. INSTALL EITHER WOOD BLOCKING OR 6" WIDE 18 GA. METAL STRAPPING TO WALL STUDS TO SUPPORT ALL WALL MOUNTED CABINETRY, RESTROOM ACCESSORIES AND EQUIPMENT.
7. PROVIDE FULL HEIGHT, VERTICAL CONTROL JOINTS AT ALL DRYWALL ASSEMBLIES ON 30-FOOT INTERVALS.
8. FURNITURE, EQUIPMENT, AND APPLIANCES SHOWN ARE FOR REFERENCE ONLY AND SHALL BE PROVIDED BY TENANT.
9. PROVIDE FINISHED ENDS ON ALL EXPOSED FACES OF CABINETRY AND COUNTERTOPS.

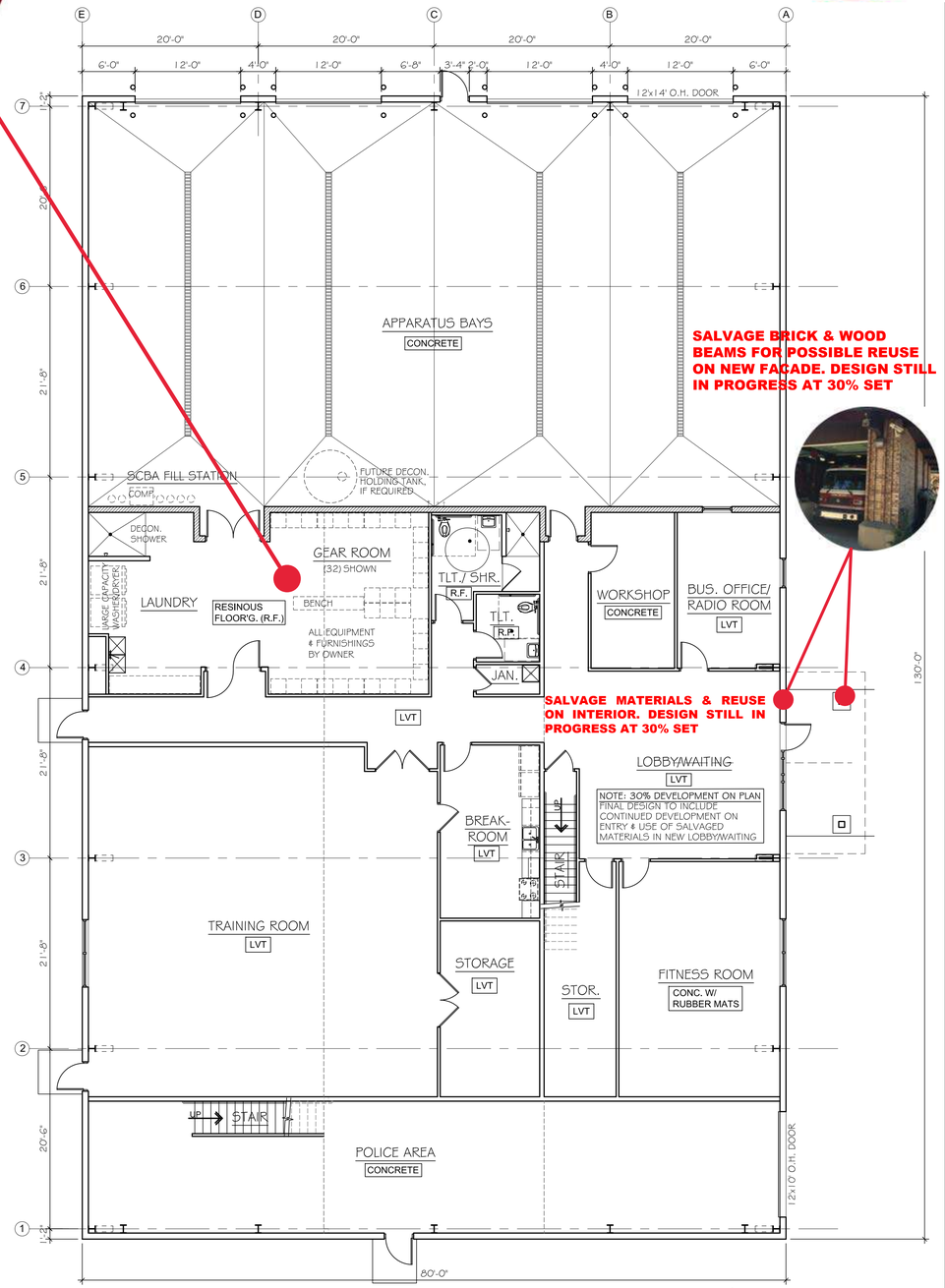
NEW GEAR RACKS



MEZZANINE FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH



SALVAGE BRICK & WOOD BEAMS FOR POSSIBLE REUSE ON NEW FACADE. DESIGN STILL IN PROGRESS AT 30% SET

SALVAGE MATERIALS & REUSE ON INTERIOR. DESIGN STILL IN PROGRESS AT 30% SET

OVERALL FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH

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HOLLADAY PROPERTIES
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Fax: 219.764.0446

PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL
LONG BEACH, IN

REVISIONS

11/11/22	30% FLOOR PLAN
11/30/22	30% DEVELOPMENT SET

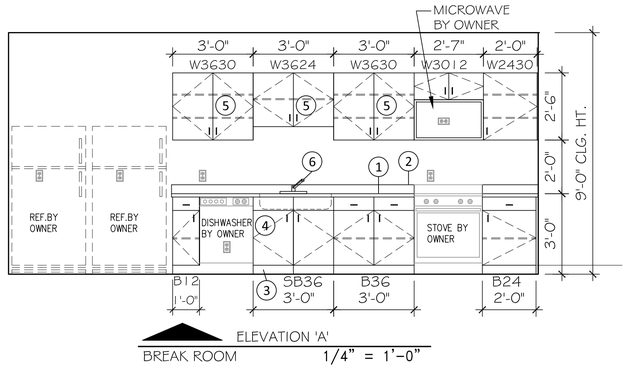
DATE: 11/30/2022

DRAWN BY: LAS

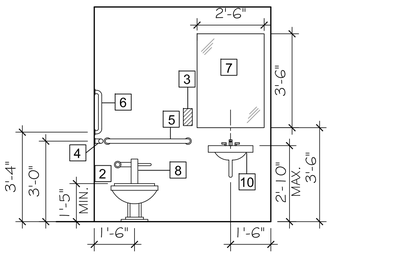
SHEET TITLE: PROPOSED FLOOR PLAN & NOTES

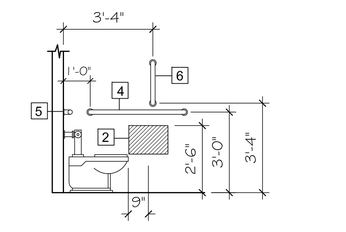
SHEET NO.: A1.1

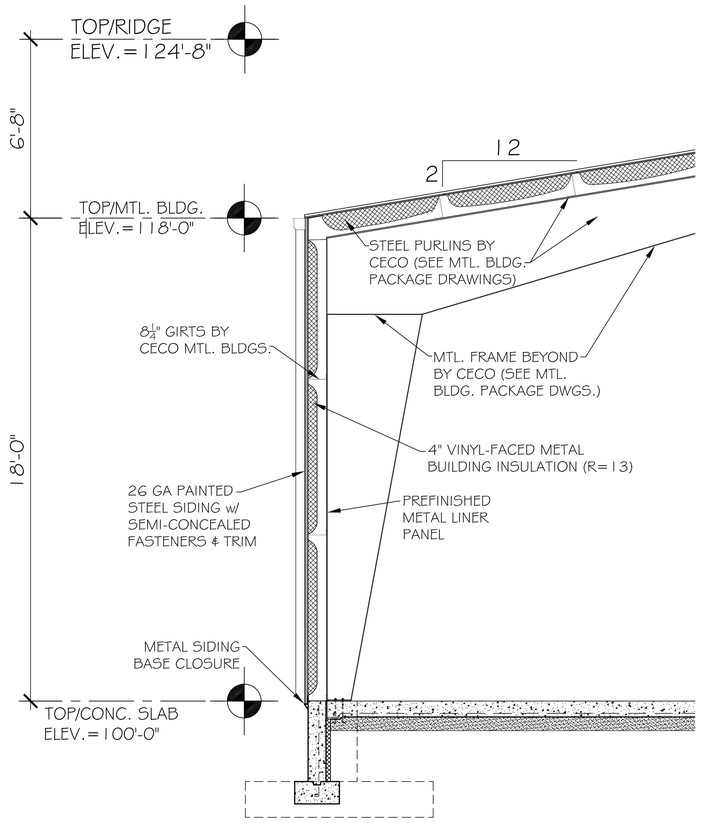
TAGS FOR MILLWORK	
1	SOLID SURFACE COUNTERTOP - SQUARE EDGE
2	SOLID SURFACE BACKSPLASH/ SIDESPLASH
3	CERAMIC TILE BASE - SEE ROOM FINISH SCHEDULE
4	BASE CABINETS (PLAS. LAM.) W/ ADJUSTABLE SHELVES & STANDARD WIRE PULLS
5	WALL CABINETS (PLAS. LAM.) W/ ADJUSTABLE SHELVES & STANDARD WIRE PULLS
6	S.S. DOUBLE BOWL SINK W/ CHROME SINGLE HANDLE FAUCET



TAGS FOR RESTROOMS	
1	RECESSED TOWEL/WASTE UNIT -BOBRICK CLASSIC B3944 -STAINLESS -MOUNT HEIGHT -TOP @ 60 " A.F.F.
2	MULTI-ROLL TOILET TISSUE DISPENSER -BOBRICK CLASSIC B2888 -STAINLESS -MOUNT HEIGHT -TOP @ 30 " A.F.F., 36" FROM BACK WALL TO OUTSIDE EDGE OF DISPENSER
3	SURFACE MOUNT SOAP DISPENSER -BOBRICK CLASSIC LIQUID MATE B155 -MOUNT HEIGHT -TOP @ 50" A.F.F.
4	42" LENGTH GRAB BAR (1 1/2" DIA.) -STAINLESS
5	36" LENGTH GRAB BAR (1 1/2" DIA.) -STAINLESS
6	18" LENGTH GRAB BAR (1 1/2" DIA.) -STAINLESS
7	FRAMELESS MIRROR -1/4" PLATE GLASS -SIZED AS SHOWN ON PLAN ELEVATIONS.
8	FLOOR MOUNTED, FLUSH VALVE, ADA COMPLIANT WATER CLOSET W/ ELONGATED BOWL -VITREOUS CHINA
9	WALL HUNG LAVATORY W/ ADA COMPLIANT SINGLE LEVER FAUCET -VITREOUS CHINA
10	FOLD-DOWN, ADA COMPLIANT SHOWER SEAT
11	48" LENGTH GRAB BAR (1 1/2" DIA.) -STAINLESS
12	WALL MOUNTED ADA COMPLIANT HAND SHOWER W/ MIN. 59" LONG HOSE - MOUNT 27" MAX. FROM SEAT WALL & BETWEEN 38"-48" HIGH A.F.F.







1 / A1.2 TYP. WALL SECTION
3/4" = 1'-0"

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PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL LONG BEACH, IN

REVISIONS

11/11/22	**30% FLOOR PLAN**
11/30/22	**30% DEVELOPMENT SET**

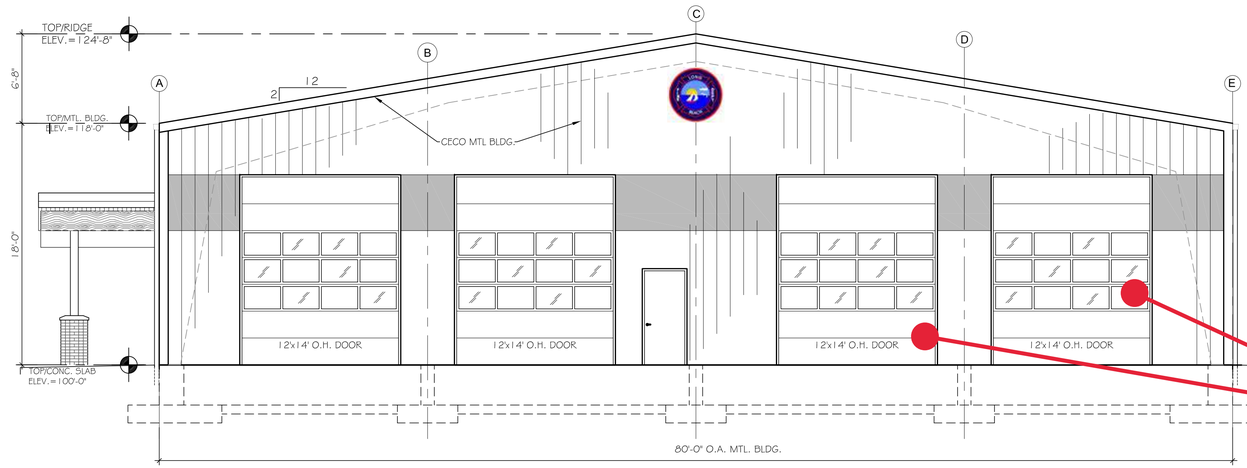
DATE **11/30/2022**

DRAWN BY **LAS**

SHEET TITLE
PROPOSED INTERIOR ELEVATIONS & WALL SECTION

SHEET NO.
A1.2

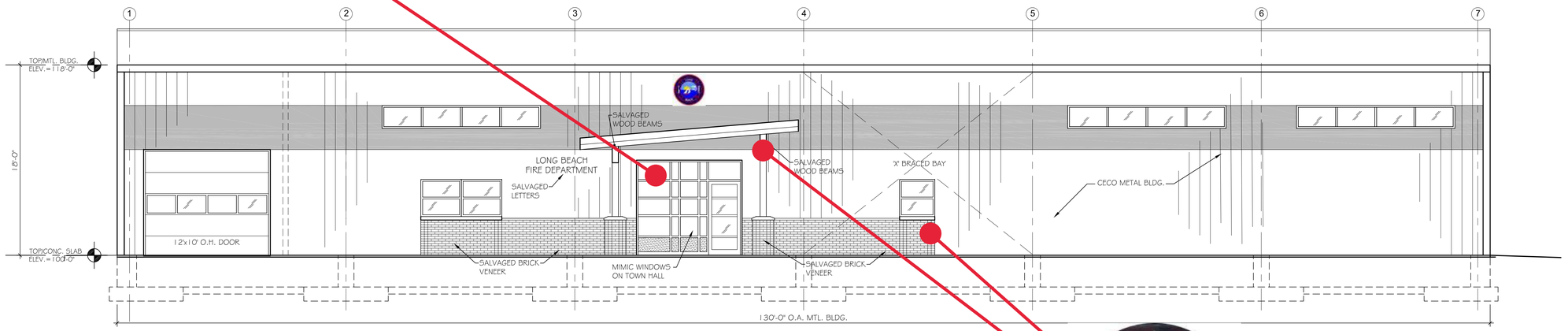
MIMIC SHAPE/DESIGN OF EXISTING TOWN HALL WINDOW TO COMPLIMENT ADJACENT NEW BUILDING. DESIGN STILL IN PROGRESS AT 30% SET



PROPOSED NORTH ELEVATION

3/16" = 1'-0"

ACCENT NEW OVERHEAD DOORS. CONFIRM/DISCUSS WITH OWNER AT FINAL DESIGN PHASE.

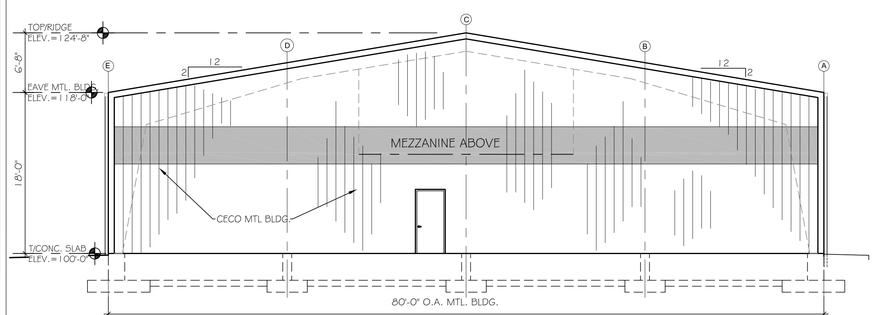


NOTE: 30% DEVELOPMENT ON ELEVATIONS
FINAL DESIGN TO INCLUDE CONTINUED DEVELOPMENT ON ENTRY ELEVATION AFTER DISCUSSIONS W/ FIRE DEPARTMENT & TOWN STAFF

PROPOSED EAST ELEVATION

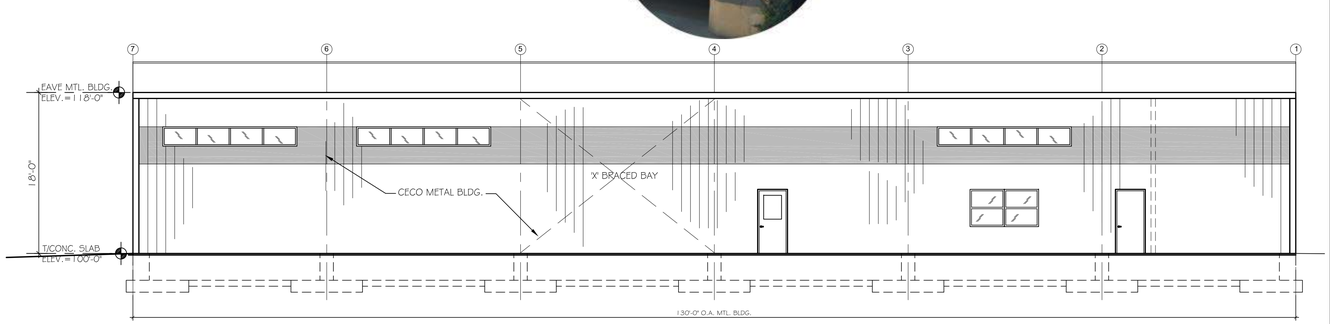
3/16" = 1'-0"

SALVAGE BRICK & WOOD BEAMS FOR POSSIBLE REUSE ON NEW FACADE. DESIGN STILL IN PROGRESS AT 30% SET



PROPOSED SOUTH ELEVATION

1/8" = 1'-0"



PROPOSED WEST ELEVATION

1/8" = 1'-0"

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PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL
LONG BEACH, IN

REVISIONS

11/11/22	**30% FLOOR PLAN**
11/30/22	**30% DEVELOPMENT SET**

DATE: **11/30/2022**

DRAWN BY: **LAS**

SHEET TITLE: **PROPOSED ELEVATIONS**

SHEET NO.: **A2.1**

FOUNDATION:

1. FOUNDATIONS ARE DESIGNED WITH ASSUMED ALLOWABLE SOIL BEARING = 2,500 PSF. MODIFY/ VERIFY WITH OWNERS FUTURE GEOTECHNICAL EXPLORATION REPORT.
2. IF QUESTIONABLE SOILS ARE ENCOUNTERED DURING EXCAVATION, CONTRACTOR SHALL OBTAIN A SOILS ENGINEER TO EVALUATE SOIL BEARING CAPACITY. AT THE DIRECTION OF THE SOILS ENGINEER, REMOVE UNSATISFACTORY SOILS TO AN ELEVATION WHERE SATISFACTORY SOIL IS ENCOUNTERED. REPLACE UNSATISFACTORY SOIL w/ EITHER COMPACTED STRUCTURAL FILL OR CONCRETE SLURRY.
3. PLACE FOUNDATION CONCRETE ON CLEAN FIRM BEARING SOILS MATERIAL.
4. MINIMUM DEPTH TO THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 4'-0".
5. INSTALL 2" THICK RIGID INSULATION VERTICALLY AT ALL EXTERIOR FOUNDATION LOCATIONS. USE EXTRUDED POLYSTYRENE INSULATION WITH R=10 RATING.
6. CONTRACTOR TO CONSULT WITH LOCAL AUTHORITIES PRIOR TO EXCAVATION TO LOCATE UNDERGROUND GAS, SEWER, WATER, AND ELECTRICAL OBSTACLES.
7. STRUCTURAL FILL (VERIFY WITH FUTURE GEOTECHNICAL REPORT)
   - USE: ALL BACKFILL WITHIN 5'-0" OF THE BUILDING LINES.
   - TYPE: PREDOMINANTLY WELL GRADED MATERIAL WITH 100% PASSING THE 3" SIEVE, 70-100% PASSING THE #4 SIEVE AND LESS THAN 15% PASSING THE #200 SIEVE OR AS NOTED IN THE GEOTECHNICAL REPORT - USING THE MORE STRINGENT DATA.
   - COMPACTION: 97% MODIFIED PROCTOR (ASTM: D1557) PLACED IN LIFTS NOT TO EXCEED 8".
8. IN AREAS OF COMPACTED FILL WITHIN THE BUILDING LINES, BACKFILLING AGAINST BOTH SIDES OF WALLS SHALL BE DONE AT THE SAME RATE TO PREVENT STRESS AND OVERTURNING OF FOUNDATION WALLS.
9. ALL EARTHWORK WITH ON-SITE MATERIALS SHOULD BE PERFORMED WHEN TEMPERATURES ARE ABOVE FREEZING. FROZEN SOIL SHOULD NOT BE USED BENEATH STRUCTURES. ALL FOUNDATION EXCAVATION MUST BE INSULATED AGAINST FREEZING UNTIL CONSTRUCTION OF FOUNDATION IS COMPLETE.
10. SOILS THAT BECOME RUTTED OR DISTURBED BY CONSTRUCTION VEHICLES WILL BE UNSUITABLE FOR SUPPORTING FOUNDATION AND CONCRETE SLABS. THE SOILS SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR FILL.

CONCRETE:

1. CONCRETE AND ITS PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 318 AND ACI 301 EXCEPT AS MODIFIED IN THESE SPECIFICATIONS. PROTECT ALL CONCRETE IN ACCORDANCE WITH ACI STANDARDS FOR HOT, COLD WEATHER CONCRETING.
2. STANDARD WEIGHT CONCRETE SHALL COMPLY WITH THE FOLLOWING:
   - A. FOUNDATIONS & INTERIOR FLOOR SLABS - 5½ BAG MIX TO ATTAIN MINIMUM COMPRESSIVE STRENGTH (AT 28 DAYS): 3,500 PSI;
     (1) SLUMP TO BE 5" +/- 1"
   - B. EXTERIOR CONCRETE - 6 BAG MIX TO ATTAIN MINIMUM COMPRESSIVE STRENGTH (AT 28 DAYS): 4000 PSI
   - C. MAXIMUM WATER/CEMENT RATIO - .45 AIR ENTRAINED = BAG MIX
     - .52 (NON-AIR ENTRAINED)
   - D. AGGREGATE SIZE - FOOTINGS - 12" THICK OR GREATER 1½"
     - ALL OTHER CONCRETE ¾"
   - E. TOTAL AIR CONTENT - 6% ± 1 1/2%
   - F. REINFORCING BARS: PROVIDE DEFORMED BARS COMPLYING WITH ASTM A615 GRADE 60.
   - G. WELDED WIRE FABRIC: ASTM A185, COLD DRAWN STEEL PLAIN, OR IN LIEU OF WWF, USE 3pcy FIBERFORCE-750 FIBER MESH (BY ABC POLYMER) IN ALL FLATWORK.
   - H. NO ADMIXTURES WITHOUT APPROVAL FROM ENGINEER. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED.
3. CONCRETE COVERAGE FOR REINFORCING (U.N.O.):
   - A. UNFORMED CONCRETE IN CONTACT WITH EARTH = 3"
   - B. FORMED CONCRETE IN CONTACT WITH EARTH = 2"
   - C. OTHER CONCRETE = 1½"
4. LAP SPLICES SHALL BE THE FOLLOWING BAR DIAMETERS UNLESS NOTED OTHERWISE ON DRAWINGS. LOCATE SPLICES AT POINT OF MINIMUM STRESS. WELDED SPLICES ARE NOT PERMITTED.

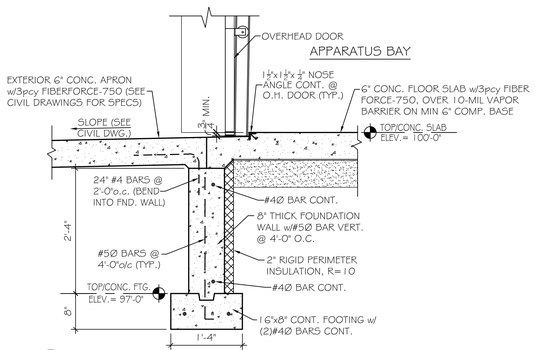
   4A. ALL REINF. EXCEPT FOR THAT NOTED IN 4B.

REINFORCEMENT	LAP LENGTH IN BAR DIAMETERS
#3 THROUGH #6	35
#7 THROUGH #11	48

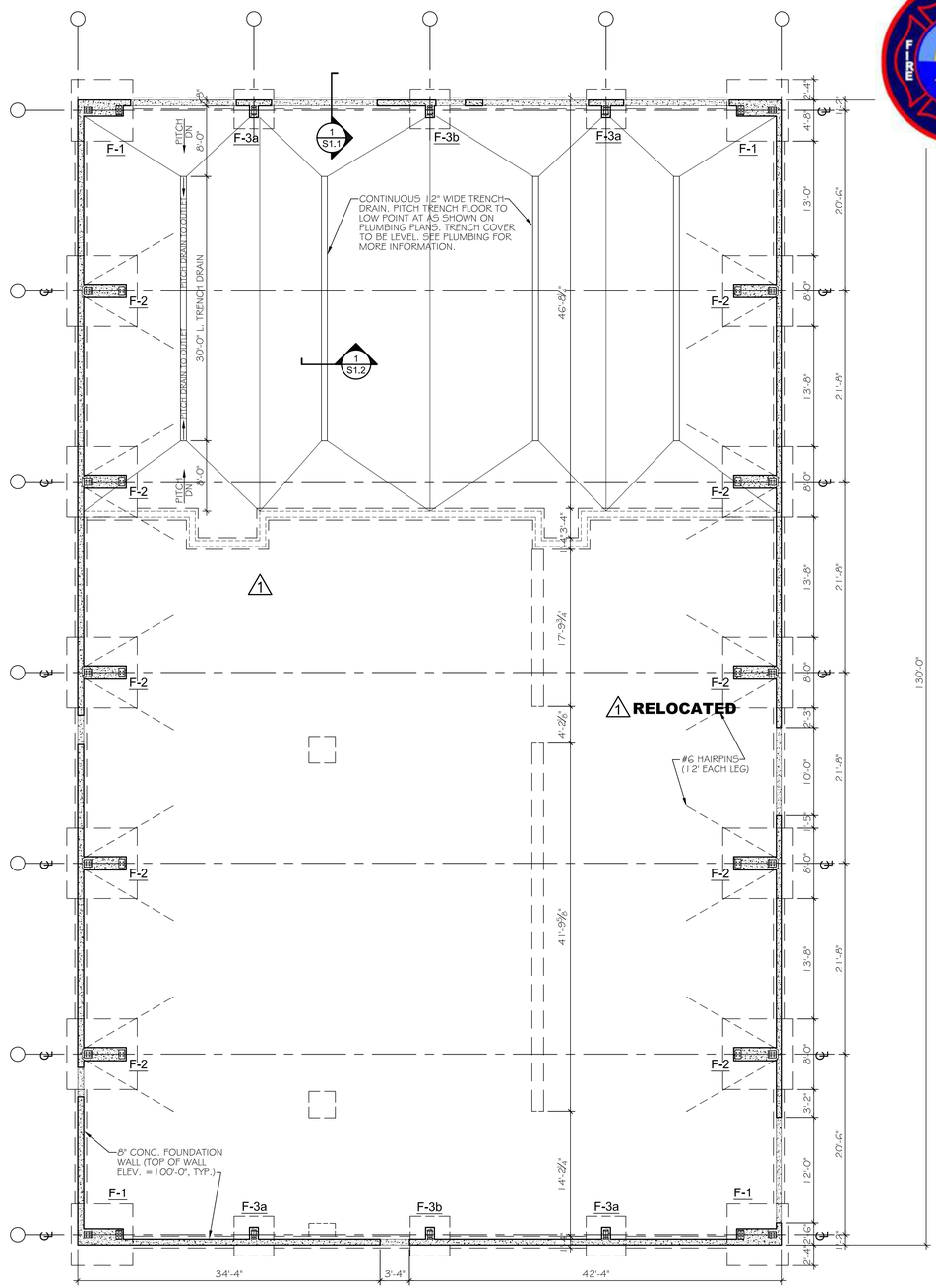
   4B. HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCH OF CONCRETE IS CAST BELOW THE REINFORCEMENT (I.E. HORIZONTAL WALL REINFORCEMENT AND TOP BEAM REINFORCEMENT)

REINFORCEMENT	LAP LENGTH IN BAR DIAMETERS
#3 THROUGH #6	50
#7 THROUGH #11	62

   4C. WELDED WIRE FABRIC - MESH SPACE +2".
5. COMPLY WITH ACI 301. POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT, LOCATE AND SUPPORT WITH METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS, AS REQUIRED. SET WIRE TIES SO ENDS ARE DIRECTED INTO CONCRETE, NOT TOWARD EXPOSED CONCRETE SURFACES.
6. RE-ENTRANT CORNERS: AT ALL RE-ENTRANT CORNERS IN SLABS, WALLS AND TOPPING, THE CONTRACTOR SHALL INSTALL TWO (2) #3x3'-0" LONG, EACH MAT, AT 3-INCH O.C.
7. PROVIDE BENT CORNER BARS TO MATCH AND LAP HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF WALLS AND FOOTING.
8. CONCRETE CAN ONLY BE PLACED ON A FROST-FREE SUBGRADE
9. MECHANICALLY VIBRATE ALL CONCRETE
10. ALL CAST-IN-PLACE CONCRETE SHALL BE PROTECTED AGAINST RAPID DRYING AND MUST BE KEPT MOIST FOR A MINIMUM OF (7) DAYS FOR NOMINAL CONCRETE.
11. PROVIDE A ¾"x¾" CHAMFER ON ALL EXPOSED CORNERS OF CONCRETE.
12. MAXIMUM FREE DROP OF ALL CONCRETE = 2'-0".
13. PROVIDE DOWELS OF SAME SIZE AND SPACING AS VERTICAL WALL OR COLUMN REINFORCING, WITH STANDARD HOOKS, AT THE FOUNDATION (U.N.O.).
14. CONCRETE FIELD TESTS FOR SLUMP, AIR CONTENT, YIELD AND STRENGTH SHALL BE CONDUCTED BY A CERTIFIED CONCRETE TECHNICIAN IN ACCORDANCE WITH ACI 301. TESTS SHALL BE SUBMITTED TO ENGINEER/ ARCHITECT FOR APPROVAL.



1 S1.1 CONC. APRON SECTION @ O.H. DOORS CONT. @ NORTH ELEVATION — 3/4" = 1'-0"



OVERALL FOUNDATION PLAN

1/8" = 1'-0"

PLAN NORTH

HOLLADAY PROPERTIES
www.holladayproperties.com
6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL LONG BEACH, IN

REVISIONS

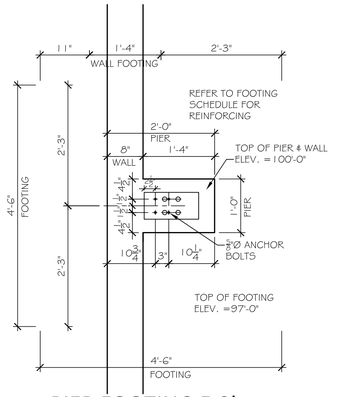
11/11/22	30% FLOOR PLAN
11/30/22	30% DEVELOPMENT SET

DATE: 11/30/2022

DRAWN BY: LAS

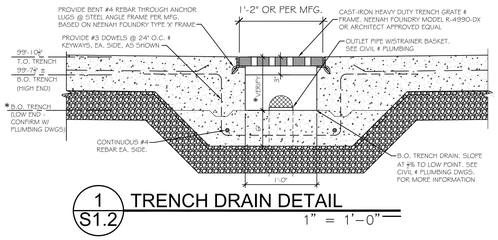
SHEET TITLE: FOUNDATION PLAN & NOTES

SHEET NO.: S1.1



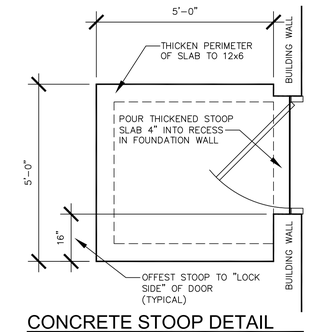
PIER FOOTING F-3b

3/4" = 1'-0"



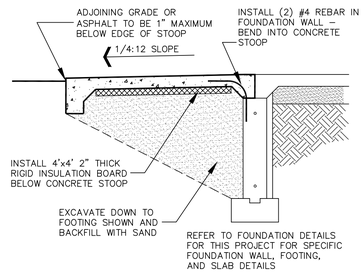
1 S1.2 TRENCH DRAIN DETAIL

1" = 1'-0"



CONCRETE STOOP DETAIL

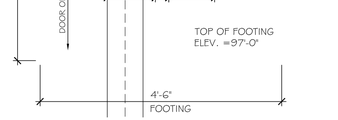
N.T.S.



CONCRETE STOOP SECTION

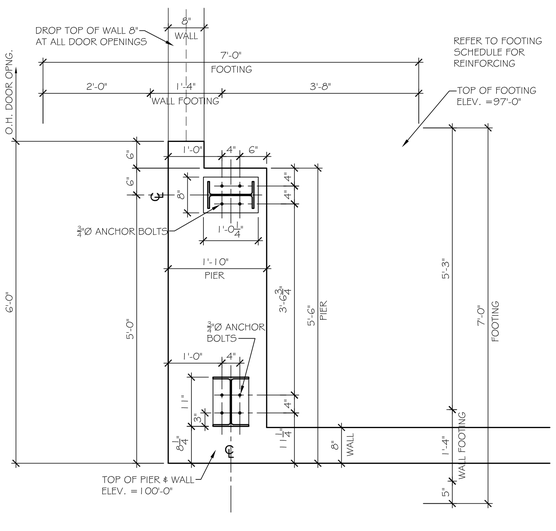
N.T.S.

FOOTING SCHEDULE								
MARK	FOOTING PAD			COLUMN PIER				
	SIZE (WxLxH)	REINFORCING	TOP/PAD	SIZE (WxLxH)	VERT. REINF.	TIES	TOP/PIER	PIER TYPE
F-1	7'-0" x 7'-0" x 16"	(8) #5's EACH WAY	97'-0"	5'-6" x 1'-10" x 3'-0"	(12) #6's	#3's @ 8"o/c	100'-0"	TYPE IV
F-2	8'-0" x 8'-0" x 16"	(8) #5's EACH WAY	97'-0"	5'-6" x 1'-6" x 3'-0"	(12) #6's	#3's @ 8"o/c	100'-0"	TYPE IV
F-3a & F-3b	4'-6" x 4'-6" x 16"	(5) #5's EACH WAY	97'-0"	2'-0" x 1'-0" x 3'-0"	(6) #6's	#3's @ 8"o/c	100'-0"	TYPE II



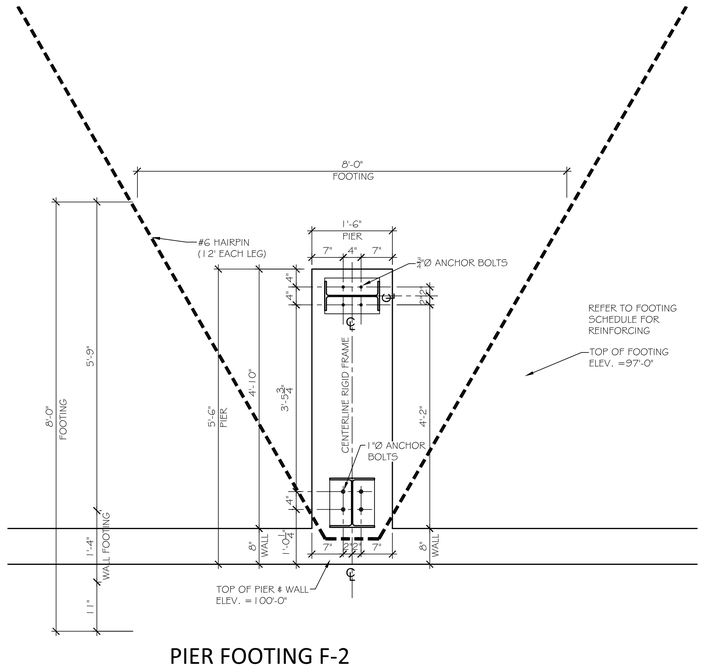
PIER FOOTING F-3a

3/4" = 1'-0"



PIER FOOTING F-1

3/4" = 1'-0"



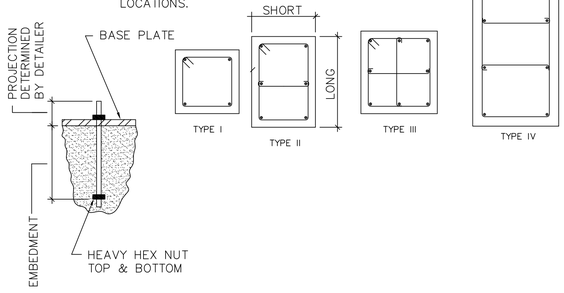
PIER FOOTING F-2

3/4" = 1'-0"

PLAN NORTH

ANCHOR BOLT EMBEDMENT SCHEDULE	
SIZE	EMBEDMENT
3/4"	12"
7/8"	14"
1"	16"
1 1/4"	20"
1 1/2"	24"

NOTE:
REFER TO BUILDING MANUFACTURER'S DRAWINGS FOR ANCHOR BOLT SIZES AND LOCATIONS.



ANCHOR BOLT EMBEDMENT SCHEDULE

N.T.S.

HOLLADAY PROPERTIES
www.holladayproperties.com
6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL LONG BEACH, IN

REVISIONS

11/11/22	**30% FLOOR PLAN**
11/30/22	**30% DEVELOPMENT SET**

DATE: **11/30/2022**

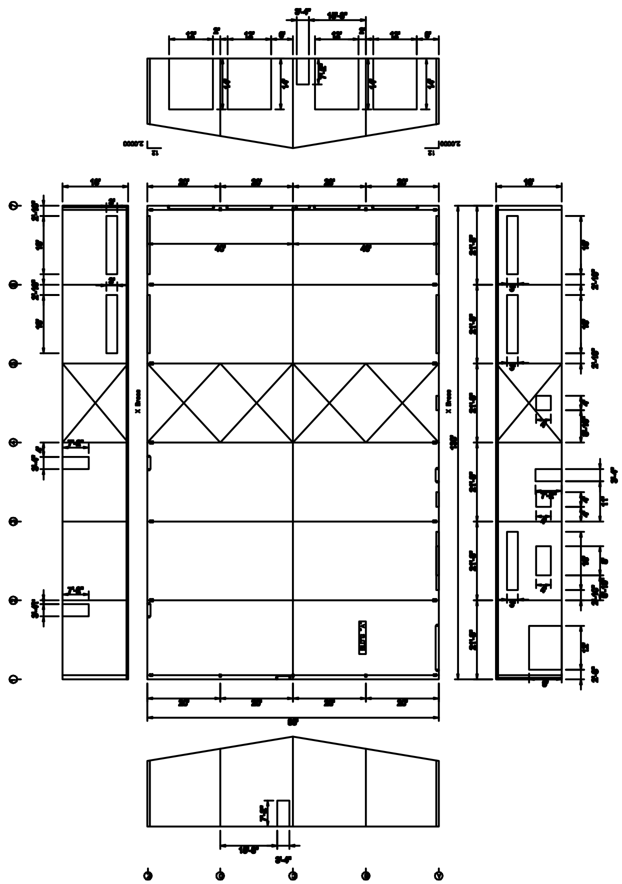
DRAWN BY: **LAS**

SHEET TITLE: **FOUNDATION DETAILS, SECTIONS & FOOTING SCHEDULE**

SHEET NO.: **S1.2**

Created : Wed Nov 23 09:35:52 2022, System CecoPRO 2021A sp10

NOT FOR CONSTRUCTION



This drawing is not for construction. This drawing is intended to depict general building information and is solely for sales presentation purposes. For clarity of presentation, items depicted may be different from actual design and final drawings. In the event of conflict between this drawing and the purchase order, the purchase order shall prevail.

2D BUILDING SKETCH - (A) Main

Ceco Building Systems
100 Red Iron Road
Rocky Mount, NC 27804

Customer:
LONG BEACH
Long Beach, IN

CONTACT: NICK SEBERT
COUNTY: Tazewell

Builder:
Travis Ladwig
416 West Madison
Tremont, IL 61568

Drawing Status: ☐ **Preliminary** ☐ **For Approval** ☐ **For Construction Permit** ☐ **For Erector Installation**

Scale: NOT TO SCALE

VERSION	PAPER SIZE
CecoPRO 2021A	**sp10** 22x34
ESTIMATOR	DATE
Travis Ladwig	11/23/022

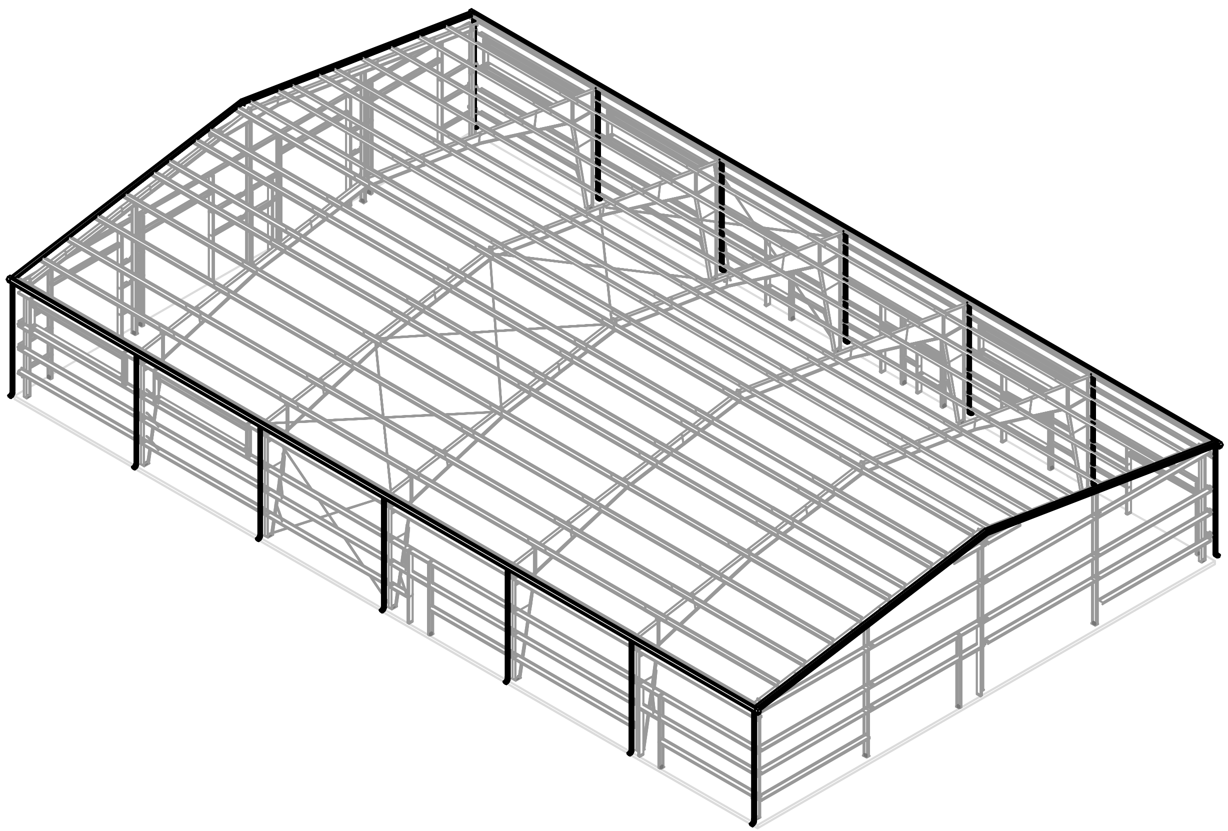
JOB NAME
LONG BEACH

MEMBER
MBMA

The engineer whose seal appears hereon is an employee for the manufacturer for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only.The undersigned engineer is not the overall engineer of record for this project.

Created : Wed Nov 23 09:37:09 2022, System CecoPRO 2021A sp10

NOT FOR CONSTRUCTION



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3D FRONT LEFT - (A) Main

Ceco Building Systems
100 Red Iron Road
Rocky Mount, NC 27804

Customer:
LONG BEACH
Long Beach, IN

CONTACT: NICK SEBERT
COUNTY: Tazewell

Builder:
Travis Ladwig
416 West Madison
Tremont, IL 61568

Drawing Status:
☐ ***Preliminary***
☐ ***For Approval***
☐ ***For Construction Permit***
☐ ***For Erector Installation***

Scale: NOT TO SCALE

VERSION	PAPER SIZE
CecoPRO 2021A sp10	22x34
ESTIMATOR	DATE
Travis Ladwig	11/23/022

JOB NAME
LONG BEACH

MEMBER
MBMA

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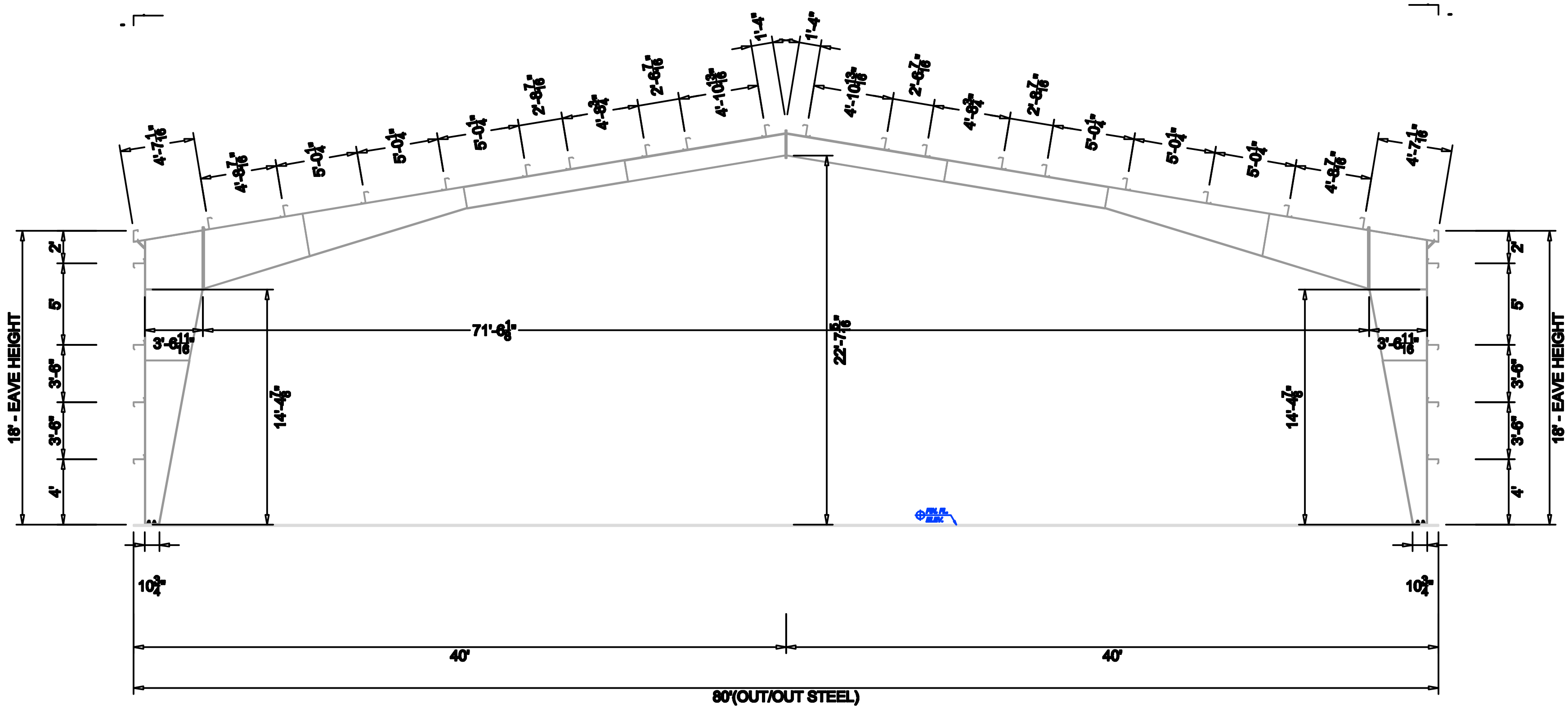
Created : Wed Nov 23 09:38:21 2022, System CecoPRO 2021A sp10

NOT FOR CONSTRUCTION



This drawing is not for construction. This drawing is intended to depict general building information and is solely for sales presentation purposes. For clarity of presentation, items depicted may be different from actual design and final drawings. In the event of conflict between this drawing and the purchase order, the purchase order shall prevail.

CROSS SECTION AT FRAME LINE "4" - (A) Main

Ceco Building Systems
100 Red Iron Road
Rocky Mount, NC 27804

Customer:
LONG BEACH
Long Beach, IN

CONTACT: NICK SEBERT
COUNTY: Tazewell

Builder:
Travis Ladwig
416 West Madison
Tremont, IL 61568

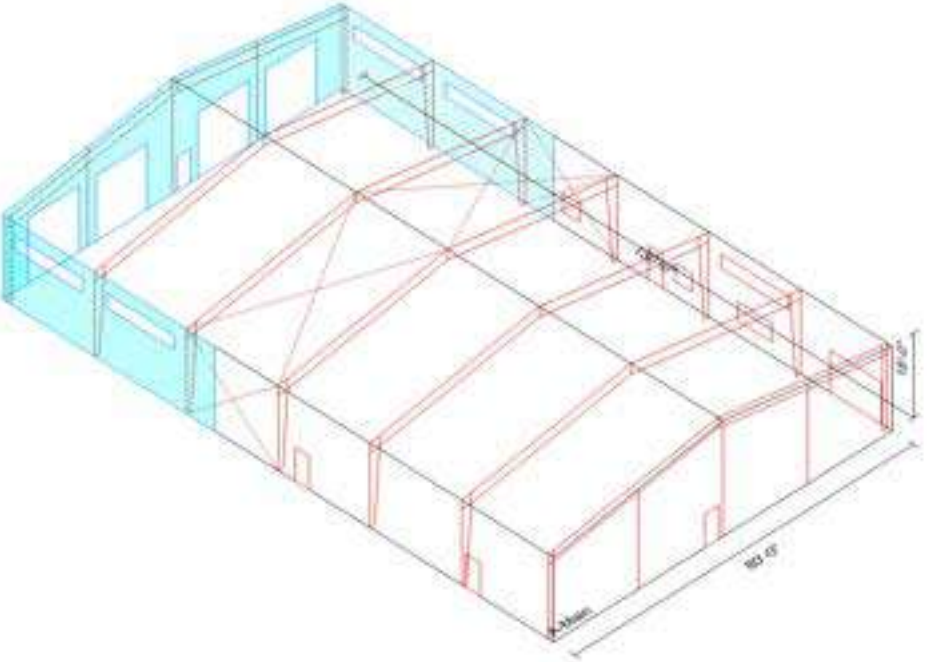
Drawing Status:
☐ Preliminary
☐ For Approval
☐ For Construction Permit
☐ For Erector Installation

Scale: NOT TO SCALE

VERSION	PAPER SIZE 22x34
ESTIMATOR Travis Ladwig	DATE 11/23/022
JOB NAME LONG BEACH	

MEMBER
MBMA

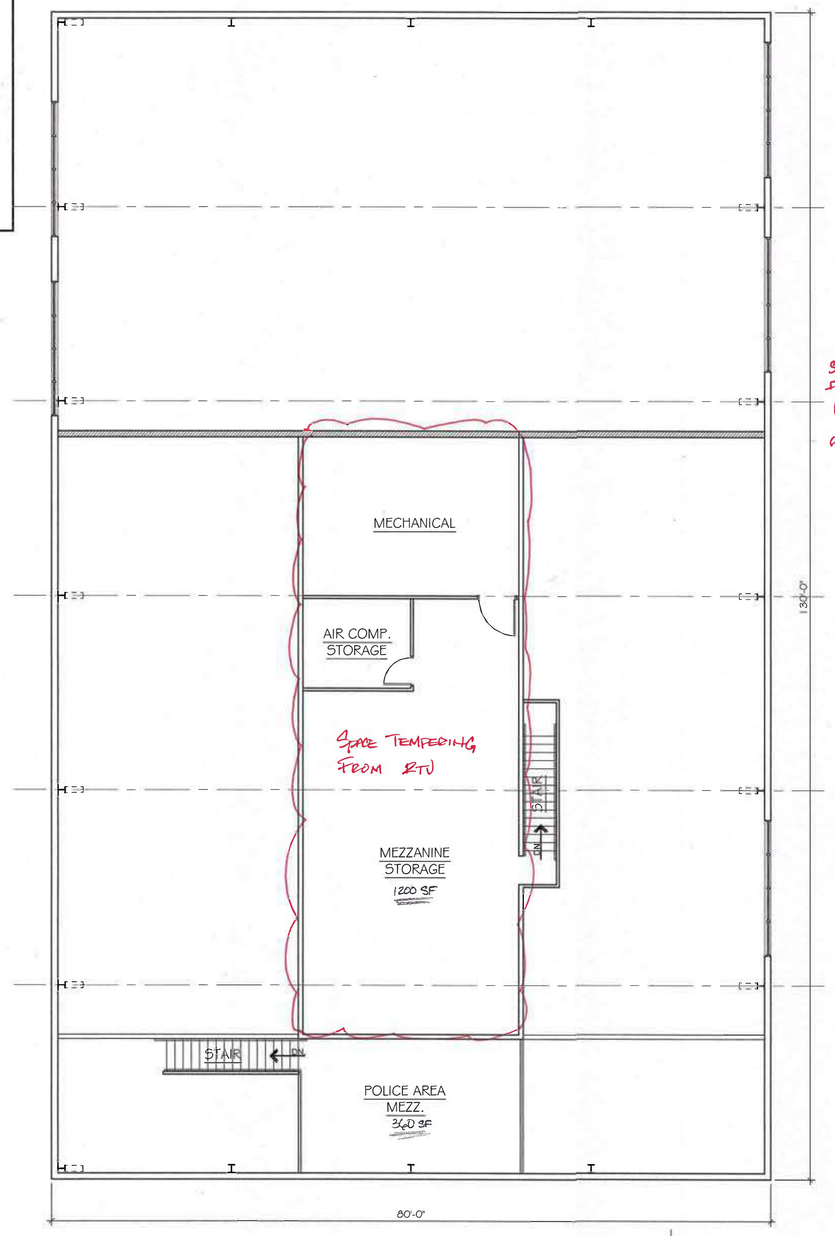
The engineer whose seal appears hereon is an employee for the manufacturer for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only.The undersigned engineer is not the overall engineer of record for this project.



Not To Scale

GENERAL NOTES

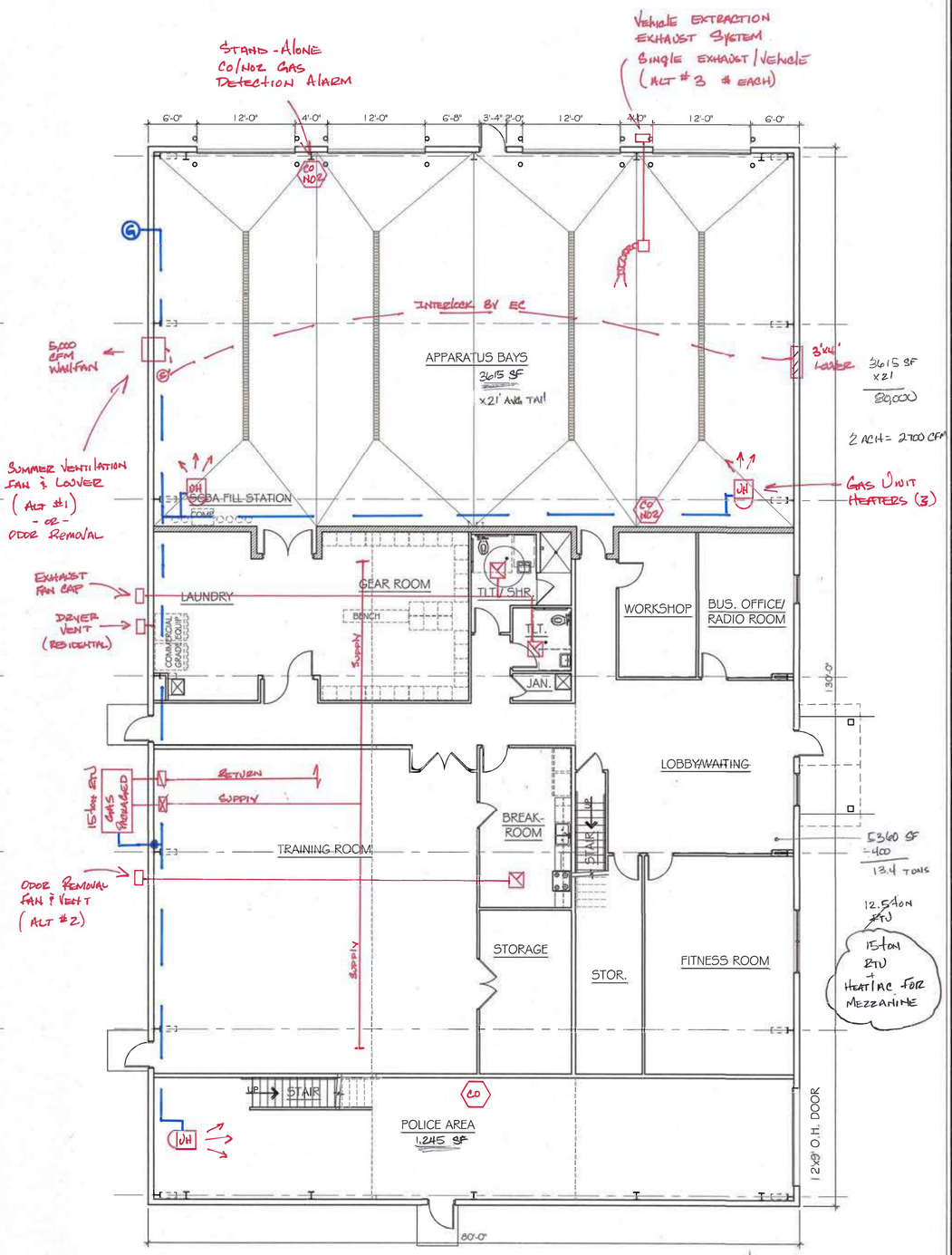
1. ALL DIMENSIONS IN PLAN VIEW AND ELEVATION ARE TAKEN FROM THE FACE OF STUDS TO THE FACE OF MASONRY UNIT, CONCRETE, OR CENTER LINE OF COLUMN, UNLESS NOTED OTHERWISE.
2. TYPE "X" DRYWALL SHALL BE USED THROUGHOUT.
3. PROVIDE 18" MINIMUM ADA REQUIRED CLEARANCE ADJACENT TO STRIKE OF DOOR.
4. ALL WALLS NOT FULLY EXTENDED TO DECK AND/OR ROOF ABOVE, SHALL BE DIAGONALLY BRACED FROM TOP OF WALL TO DECK AND/OR ROOF ABOVE.
5. UNLESS NOTED OTHERWISE, DELETE DRYWALL AND SUBSTITUTE WATER RESISTANT DRYWALL AT ALL WALLS COMMON TO WATER CLOSETS, URINALS, LAVATORIES, SINKS AND SHAFTS.
6. INSTALL EITHER WOOD BLOCKING OR 6" WIDE 18 GA. METAL STRAPPING TO WALL STUDS TO SUPPORT ALL WALL MOUNTED CABINETRY, RESTROOM ACCESSORIES AND EQUIPMENT.
7. PROVIDE FULL HEIGHT, VERTICAL CONTROL JOINTS AT ALL DRYWALL ASSEMBLIES ON 30-FOOT INTERVALS.
8. FURNITURE, EQUIPMENT, AND APPLIANCES SHOWN ARE FOR REFERENCE ONLY AND SHALL BE PROVIDED BY TENANT.
9. PROVIDE FINISHED ENDS ON ALL EXPOSED FACES OF CABINETRY AND COUNTERTOPS.



MEZZANINE FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH



OVERALL FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH

HOLLADAY PROPERTIES

www.holladayproperties.com

6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

CERTIFICATION

PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL
LONG BEACH, IN

REVISIONS

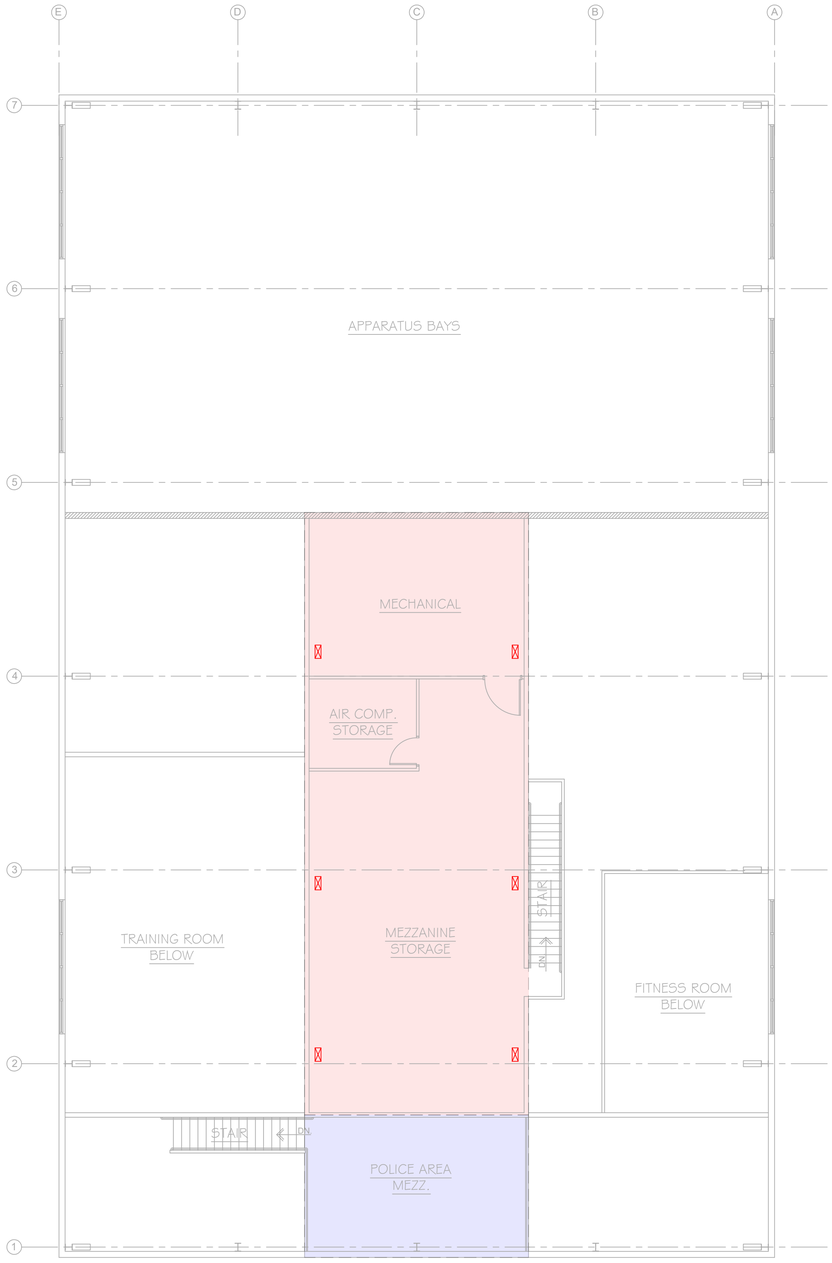
11/11/22	30% FLOOR PLAN

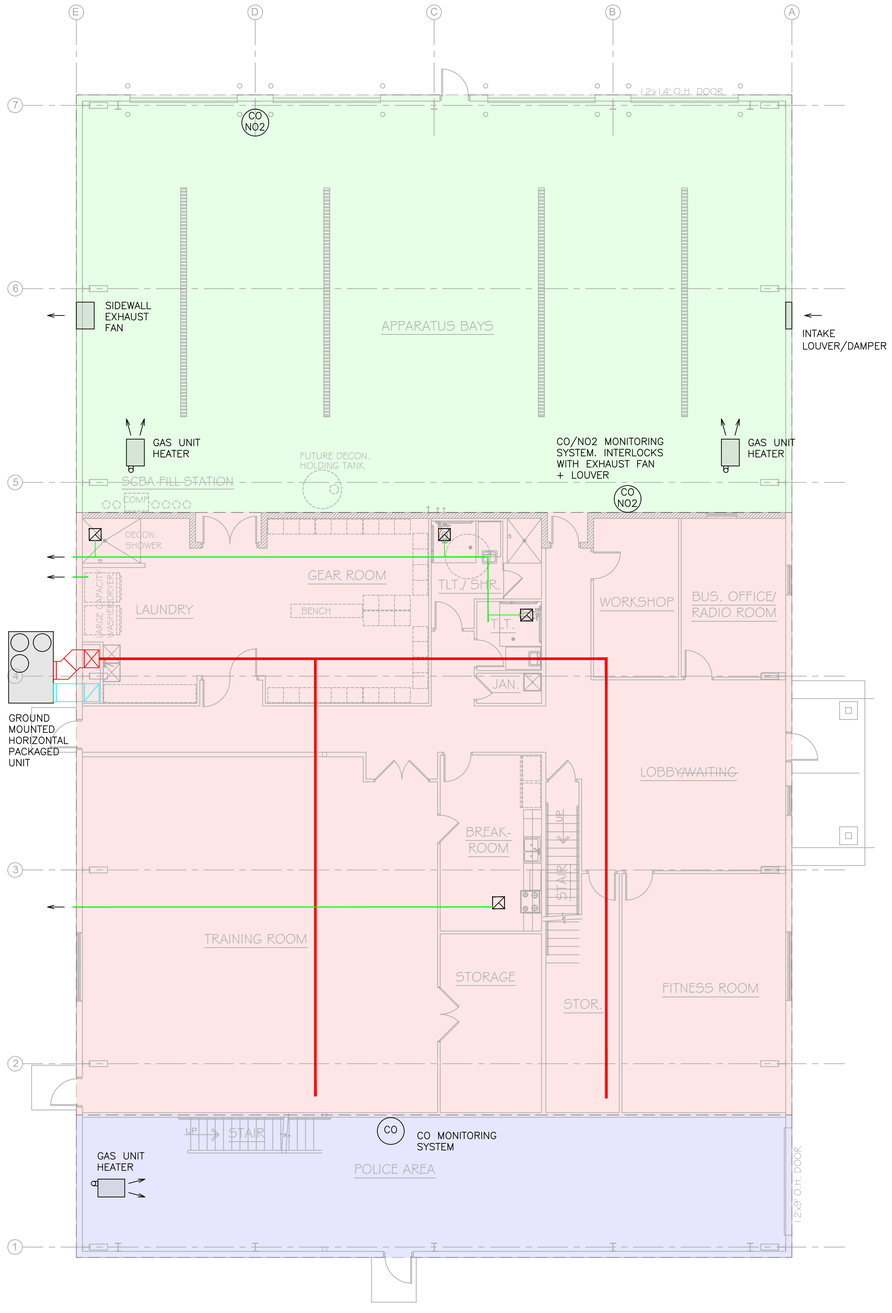
DATE: 11/11/2022

DRAWN BY: LAS

SHEET TITLE: **PROPOSED MECHANICAL PLAN & NOTES**

SHEET NO.: **M1.1**


E
D
C
B
A
7
6
5
4
3
2
1
APPARATUS BAYS
MECHANICAL
AIR COMP.
STORAGE
TRAINING ROOM
BELOW
MEZZANINE
STORAGE
STAIR
DN
FITNESS ROOM
BELOW
STAIR
DN
POLICE AREA
MEZZ.


E
D
C
B
A
7
6
5
4
3
2
1
12'x14' O.H. DOOR
CO
NO2
SIDEWALL
EXHAUST
FAN
APPARATUS BAYS
INTAKE
LOUVER/DAMPER
GAS UNIT
HEATER
FUTURE DECON.
HOLDING TANK
CO/NO2 MONITORING
SYSTEM, INTERLOCKS
WITH EXHAUST FAN
+ LOUVER
GAS UNIT
HEATER
SCBA FILL STATION
COMP.
CO
NO2
DECON.
SHOWER
LAUNDRY
GEAR ROOM
BENCH
TLT./SHR.
T.T.
WORKSHOP
BUS. OFFICE/
RADIO ROOM
JAN.
GROUND
MOUNTED
HORIZONTAL
PACKAGED
UNIT
LOBBY/WAITING
BREAK-
ROOM
UP
STAIR
TRAINING ROOM
STORAGE
STOR.
FITNESS ROOM
UP
STAIR
CO
CO MONITORING
SYSTEM
GAS UNIT
HEATER
POLICE AREA
12'x9' O.H. DOOR

GENERAL NOTES

1. ALL DIMENSIONS IN PLAN VIEW AND ELEVATION ARE TAKEN FROM THE FACE OF STUDS TO THE FACE OF MASONRY UNIT, CONCRETE, OR CENTER LINE OF COLUMN, UNLESS NOTED OTHERWISE.
2. TYPE "X" DRYWALL SHALL BE USED THROUGHOUT.
3. PROVIDE 18" MINIMUM ADA REQUIRED CLEARANCE ADJACENT TO STRIKE OF DOOR.
4. ALL WALLS NOT FULLY EXTENDED TO DECK AND/OR ROOF ABOVE, SHALL BE DIAGONALLY BRACED FROM TOP OF WALL TO DECK AND/OR ROOF ABOVE.
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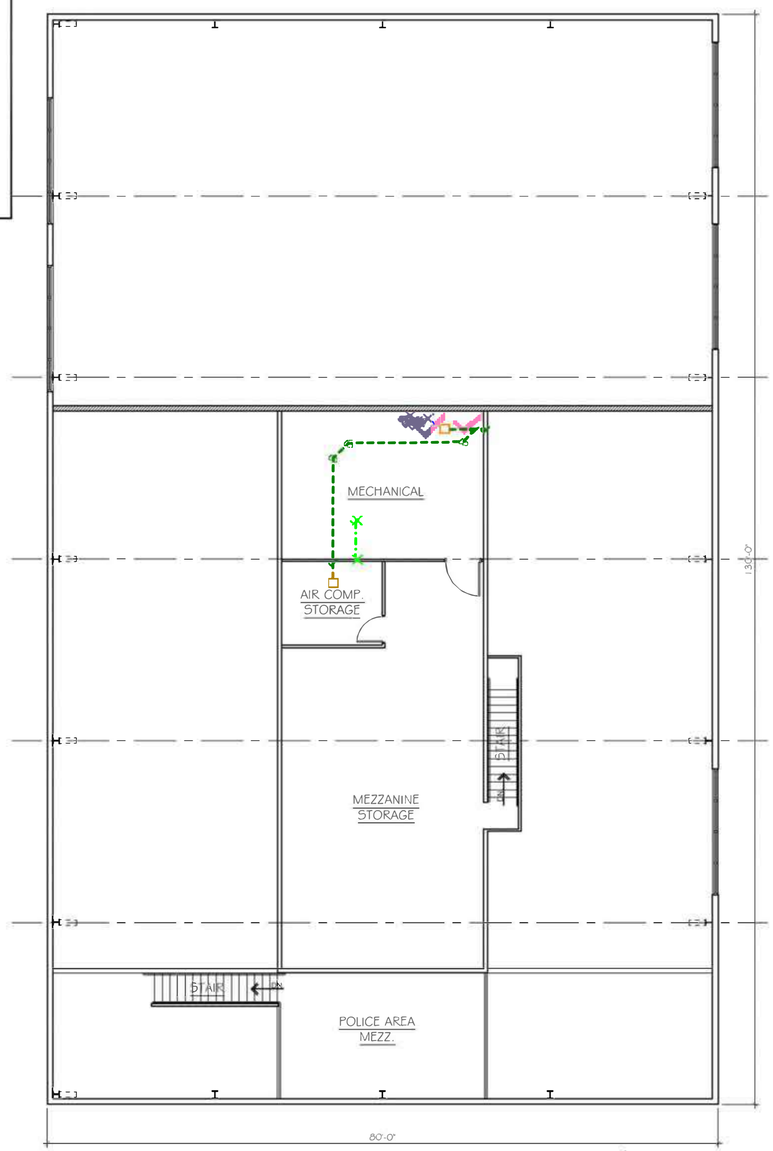
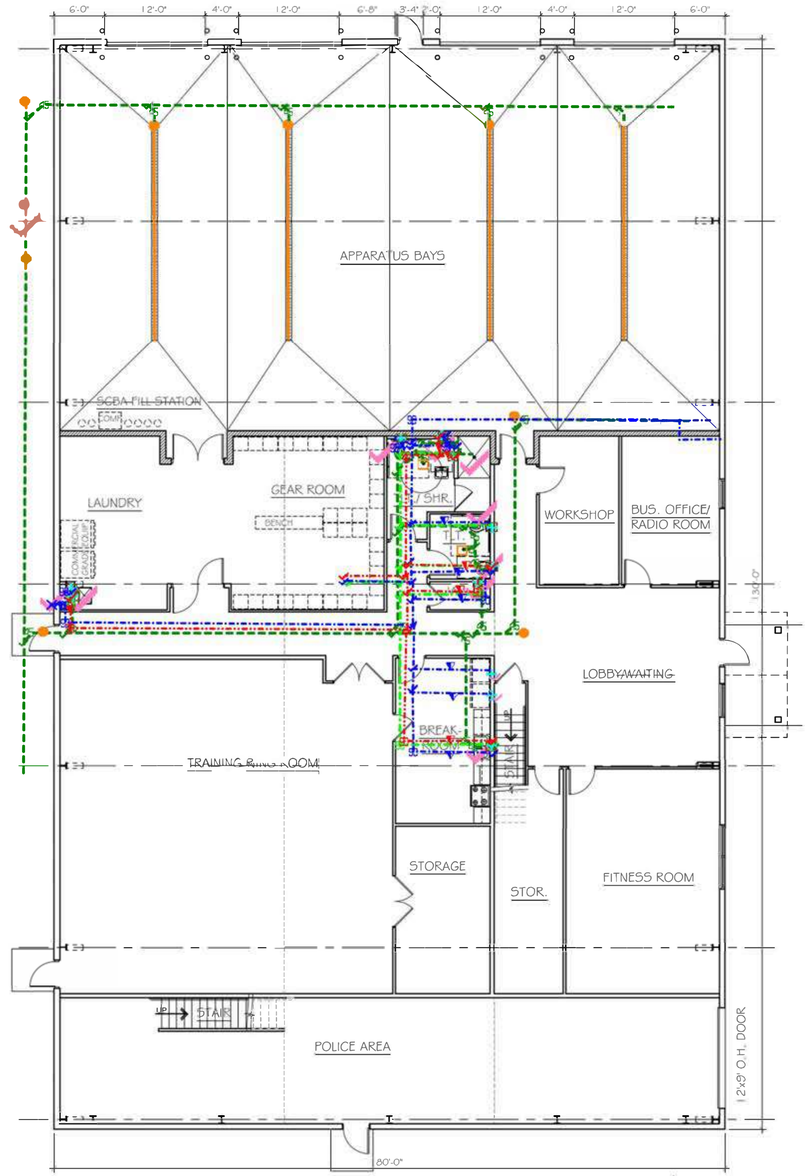
7. PROVIDE FULL HEIGHT, VERTICAL CONTROL JOINTS AT ALL DRYWALL ASSEMBLIES ON 30-FOOT INTERVALS.
8. FURNITURE, EQUIPMENT, AND APPLIANCES SHOWN ARE FOR REFERENCE ONLY AND SHALL BE PROVIDED BY TENANT.
9. PROVIDE FINISHED ENDS ON ALL EXPOSED FACES OF CABINETRY AND COUNTERTOPS.



MEZZANINE FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH



OVERALL FLOOR PLAN

1/8" = 1'-0"

PLAN NORTH

HOLLADAY PROPERTIES

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6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

CERTIFICATION

PROJECT NAME

LONG BEACH FIRE DEPARTMENT

2400 ORIOLE TRAIL
LONG BEACH, IN

REVISIONS

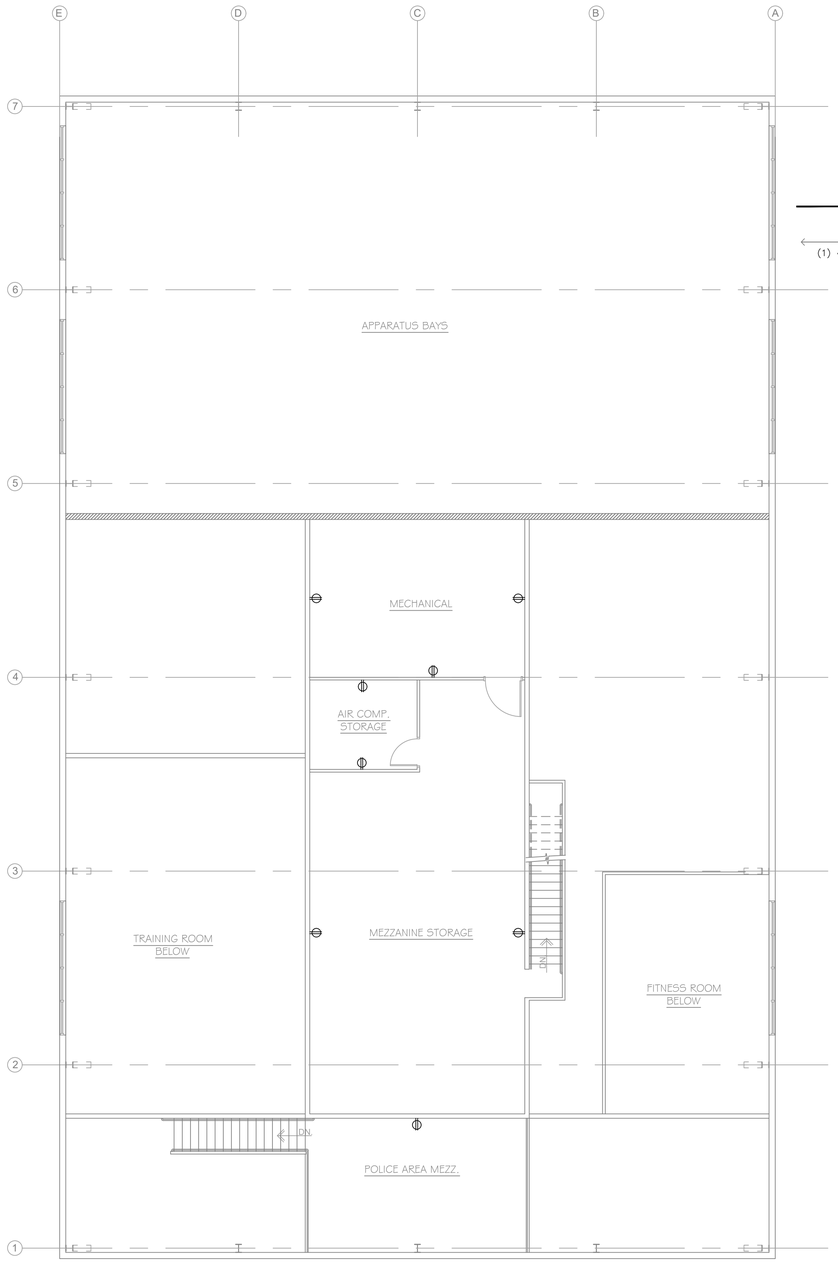
11/11/22	30% FLOOR PLAN

DATE: 11/11/2022

DRAWN BY: LAS

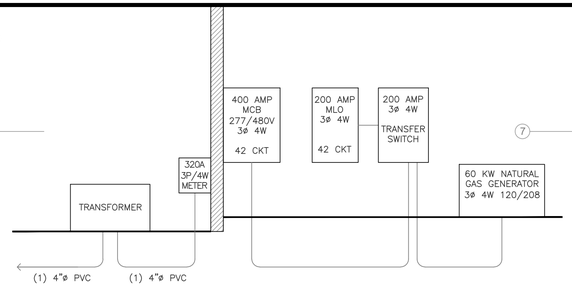
SHEET TITLE: **PROPOSED PLUMB. PLAN & NOTES**

SHEET NO.: **M2.1**



SECOND FLOOR - POWER PLAN

SCALE: 1/8" = 1-0"



ONE-LINE RISER DIAGRAM

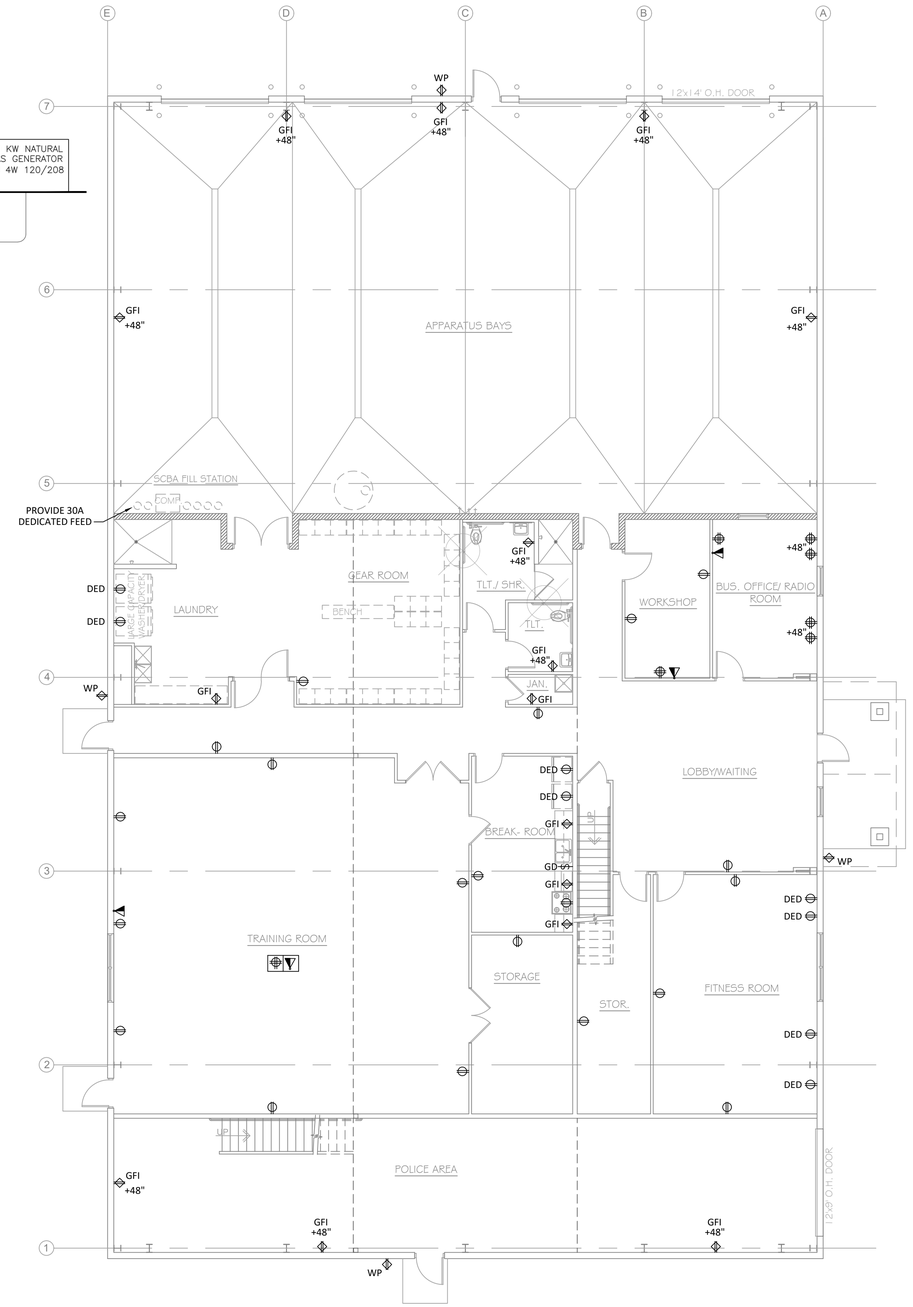
NOT TO SCALE

GENERAL POWER NOTES

1. ALL SWITCHES, DEVICES, AND COVERS TO BE WHITE IN COLOR.
2. GENERAL POWER OUTLETS SHALL BE MOUNTED 1'-6" AFF, UNLESS NOTED OTHERWISE.
3. COMMUNICATIONS OUTLETS SHALL BE MOUNTED 1'-6" AFF, UNLESS NOTED OTHERWISE.
4. OUTLETS SHOWN ABOVE COUNTERTOPS SHALL BE INSTALLED 8" (C/L) ABOVE THE WORK SURFACE, UNLESS NOTED OTHERWISE.
5. VERIFY ALL POWER AND COMMUNICATIONS SCOPE OF WORK WITH ENGINEERING DRAWINGS.

POWER SYMBOLS LEGEND

	WALL MOUNTED DUPLEX RECEPTACLE
	WALL MOUNTED QUADPLEX RECEPTACLE
GFI	WALL MOUNTED GROUND FAULT INTERRUPT (GFI) RECEPTACLE
DED	WALL MOUNTED DUPLEX RECEPTACLE WITH DEDICATED CIRCUIT
	WALL MOUNTED DATA RECEPTACLE WITH 2 PORTS
WP	BOX ABOVE CEILING WITH (1) DATA RECEPTACLE (2 PORTS) AND (1) DUPLEX RECEPTACLE FOR PROJECTOR
OC	CEILING-MOUNTED OCCUPANCY SENSOR
$OC	WALL-MOUNTED OCCUPANCY SENSOR
$D	WALL-MOUNTED DIMMER SWITCH
$GD	WALL-MOUNTED GARBAGE DISPOSAL SWITCH
WP	EXTERIOR WALL MOUNTED WEATHER PROTECTED GFI DUPLEX RECEPTACLE
	30 AMP DEDICATED FEED



FIRST FLOOR - POWER PLAN

SCALE: 1/8" = 1-0"

SUBMITTALS & REVISIONS

1	11-30-22 FOR CLIENT REVIEW

NEW BUILDING for:

LONG BEACH FIRE DEPT.

2400 ORIOLE TRAIL
LONG BEACH, IN

VIRTUE ARCHITECTS
300 WAVERLY ROAD
PORTER, INDIANA 46304
(219)508-4395
WWW.VIRTUEARCHITECTS.COM

FOR ESTIMATING ONLY

NOT FOR CONSTRUCTION

FIRST and 2nd FLOOR POWER PLANS

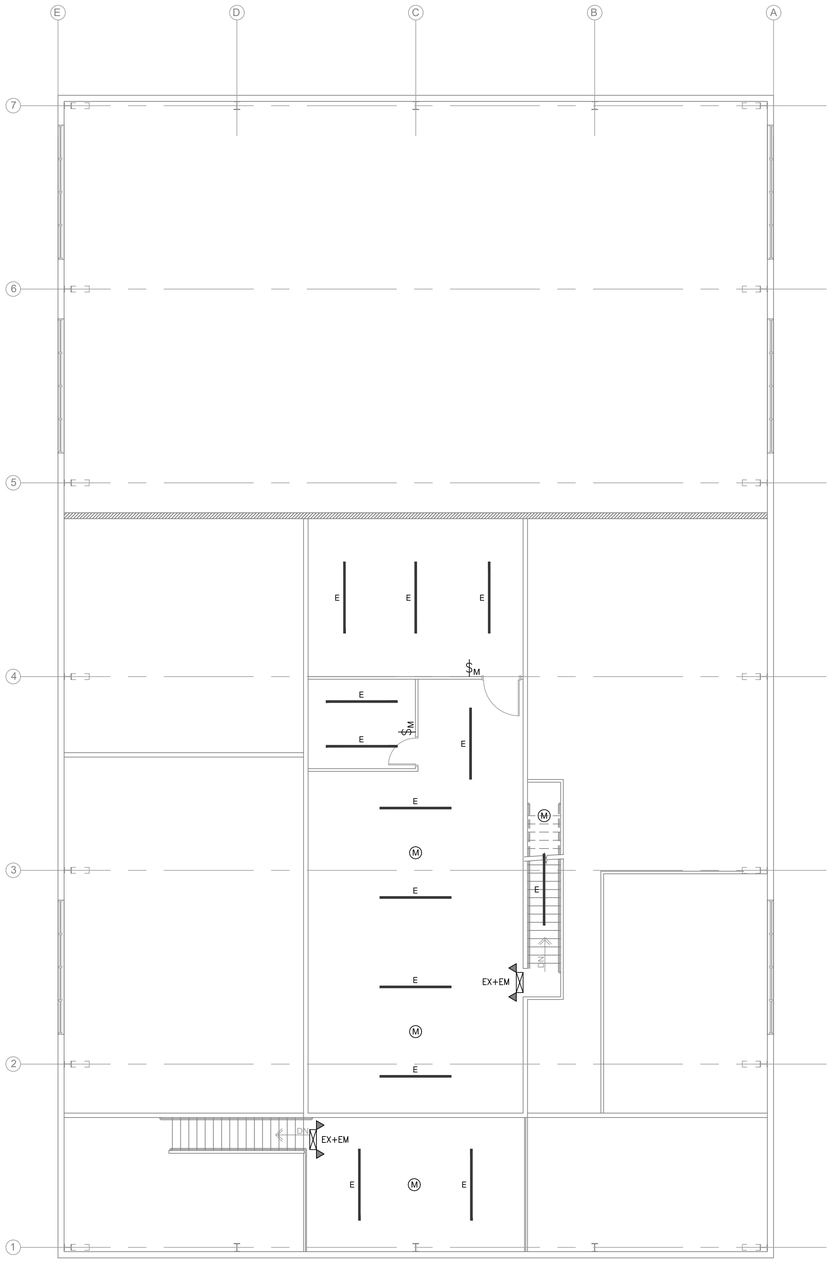
DRAWING NUMBER
E-1.1

DRAWN BY: SV

SHEET 1 **OF** 3

JOB No. VA22-31

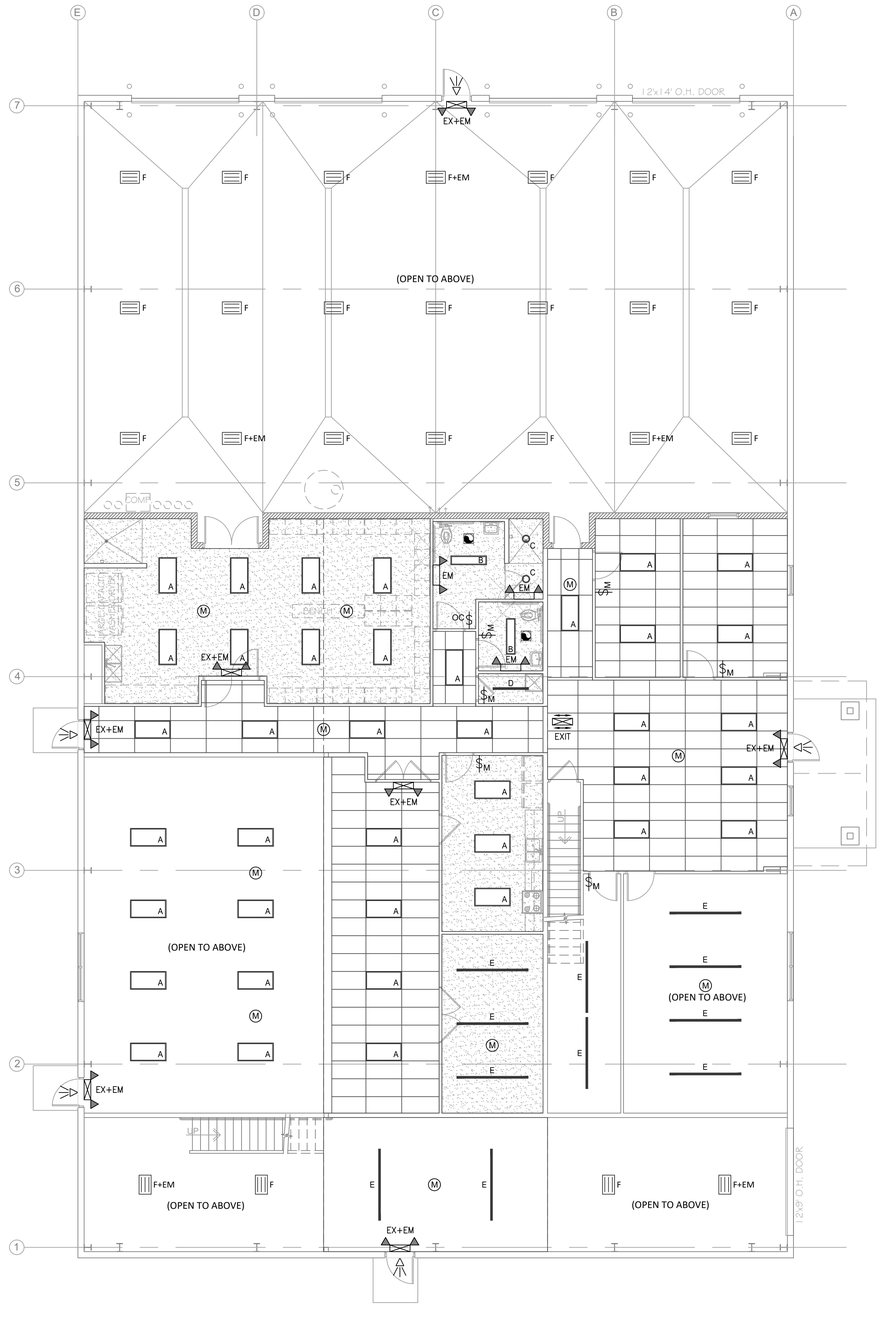
CIRCLE "R" ELECTRIC PORTAGE.IN



LIGHTING SCHEDULE

SYMBOL	QTY.	DESCRIPTION
A	40	2x4 LED, LAY-IN FIXTURE (USE TRIM KIT AT DRYWALL CEILINGS & CHAINS TO SUSPEND FROM HIGH CEILINGS)
B	2	1x4 LED, LAY-IN FIXTURE (USE TRIM KIT AT DRYWALL CEILINGS)
C	2	6" DIA. RECESSED LED CAN LIGHT
D	1	4' LED STRIP LIGHT
E	23	8' LED STRIP LIGHT
F	25	1BG 12L LED HI-BAY FIXTURE
EM	3	LED DUAL-HEAD EMERGENCY LIGHTING WITH BATTERY BACK-UP, WALL MOUNTED.
EX+EM	9	LED EXIT SIGN WITH DUAL-HEAD EMERGENCY LIGHTING AND BATTERY BACK-UP, WALL MOUNTED.
	5	TEAR DROP STYLE EGRESS LIGHT
	2	EXHAUST FAN, BROAN OR EQUAL
M	14	CEILING-MOUNTED MOTION SENSOR
$M	8	WALL-MOUNTED MOTION SENSOR
$OC	1	WALL-MOUNTED OCCUPANCY SENSOR
		2'X2' OR 2'X4' SUSPENDED CEILING GRID
		DRYWALL BULKHEAD/CEILING

NOTE: QUANTITIES PROVIDED ABOVE TO BE FIELD-VERIFIED BY E.C.



SECOND FLOOR - LIGHTING PLAN
SCALE: 1/8" = 1-0"

FIRST FLOOR - LIGHTING PLAN
SCALE: 1/8" = 1-0"

SUBMITTALS & REVISIONS

1	11-30-22 FOR CLIENT REVIEW

NEW BUILDING for:

LONG BEACH FIRE DEPT.

2400 ORIOLE TRAIL
LONG BEACH, IN

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300 WAVERLY ROAD
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(219)508-4395
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NOT FOR CONSTRUCTION

LIGHTING PLANS and FIXTURE SCHEDULE

DRAWING NUMBER
E-2.1

DRAWN BY: SV

SHEET 2 OF 3

JOB No. VA22-31

CIRCLE "R" ELECTRIC PORTAGE,IN