

ALL UNITS IN SI METRIC (MILLIMETRES) U.N.O.

ABBREVIATIONS USED:

- ci -CONTINUOUS INSULATION
- CMU -CONCRETE MASONRY UNIT
- CONT. -CONTINUOUS
- C/W -COMPLETE WITH
- DIM. -DIMENSION
- D.O. -DO OVER (DITTO)
- EL. -ELEVATION
- EPS -EXPANDED POLYSTYRENE INSULATION
- E/W -EACH WAY
- FFE -FINISHED FLOOR ELEVATION
- FR -FIRE RESISTANCE RATING
- GL -GRID LINE
- H -HORIZONTAL
- HCS -HOLLOW CORE SLAB
- ID -IDENTIFICATION
- LOA -LENGTH OVER ALL (SPAN PLUS ALL BEARING LENGTHS)
- MAG -METRES ABOVE GRADE
- MAX -MAXIMUM
- MBG -METRES BELOW GRADE
- MIN -MINIMUM
- min -MINUTES
- N/A -NOT APPLICABLE
- N/R -NOT REQUIRED
- N/S -NOT SHOWN
- No. -NUMBER
- OC -ON CENTRE
- P -PLATE
- REF -REFER TO (REFERENCE)
- REQ'D -REQUIRED
- SIM. -SIMILAR
- SOG -SLAB ON GRADE
- SPMD -STANDARD PROCTOR MAXIMUM DRY DENSITY
- TBC -TO BE CONFIRMED
- TBD -TO BE DETERMINED
- T/O -TOP OF
- TYP. -TYPICAL
- U.N.O. -UNLESS NOTED OTHERWISE
- U/S -UNDERSIDE
- V -VERTICAL
- WWR -WELDED WIRE REINFORCING
- W -WITH
- XPS -EXTRUDED POLYSTYRENE INSULATION

GENERAL DESIGN

1. ALL DESIGN WORK IN CONFORMANCE WITH THE ONTARIO BUILDING CODE.
2. SITE SPECIFIC DESIGN DATA NEAR CAVAN ONTARIO (CLOSEST TABULATED LOCATION TO MILLBROOK) TAKEN FROM MMAH SUPPLEMENTARY STANDARD SB-1, TABLE 2 AND 3, EFFECTIVE DATE: JANUARY 1, 2020.
3. CLIMATE ZONE 6.
4. LIVE LOADS DUE TO USE AND OCCUPANCY:

GARAGE FLOOR AREAS	12.0kPa	GWR >9,000kg
ROOF AREAS	1.0kPa	
OTHER FLOOR AREAS	4.8kPa	
5. CONCENTRATED LIVE LOADS:

FLOORS	9.0kN	OVER 750X750
ROOF SURFACES	1.30kN	OVER 200X200

6. SNOW LOAD (CAVAN):

- S_s 2.00kPa
- S_e 0.4kPa
- l_s 1.25ULS (NORMAL)
- l_e 0.90SLS
- C_s 0.80
- C_w 1.00
- C_e 1.00
- C_t 1.00U.N.O.
- ULS S=0.9[S_s(C_s C_w C_e C_t)+S_e]=2.5kPa
- SLS S=0.9[S_s(C_s C_w C_e C_t)+S_e]=1.8kPa

7. WIND LOAD (CAVAN):

- q 0.44kPa 1/50 HOURLY WIND PRESSURE
- l_w 1.25ULS (NORMAL)
- l_e 0.75SLS
- C_w 0.70
- C_e 1.00
- C_s 1.00
- C_t 1.00
- C_g 1.00
- C_g 1.00
- R = k_dqC_eC_sC_g

6. SEISMIC DATA (CAVAN):

- S_s(0.2) 0.140
- S_s(0.5) 0.092
- S_s(1.0) 0.055
- S_s(2.0) 0.0280
- S_s(5.0) 0.0071
- S_s(10) 0.0030
- PGA 0.086
- PGV 0.074
- SITE CLASS C
- k_s 1.5
- F_a 1.0
- f_gF_aS_s(0.2) 0.21>0.16
- f_gF_aS_s(2.0) 0.042>0.03
- PG_{Aref} 0.8PGA=0.0688
- F_v=1.0 F_v=1.0
- f_gF_aS_s(0.2)=0.21<0.35

SFRS - MASONRY STRUCTURES

- R_m=1.5 R_e=1.5 h_m=3.3 T_m=0.122
- V=S(T_m)k_sW/(R_mR_e)=0.102W
- V=S(T_m)k_sW/(R_mR_e)=0.088W

FOUNDATION

1. FOUNDATION DESIGN IN CONFORMANCE WITH *GEOTECHNICAL INVESTIGATION PROPOSED NEW FIRE HALL BUILDING - 988 COUNTY ROAD 10, MILLBROOK, ONTARIO, DATED MARCH 17, 2022. PREPARED BY GHM LIMITED (REFERENCE: 11231078) FOR THE TOWNSHIP OF CAVAN MONAGHAN AND ADDENDUM #1, DATED 8 APRIL 2022.*
2. FOUNDATION DESIGN BASED ON A GEOTECHNICAL REACTION AT SERVICEABILITY LIMIT STATE (SLS) OF 200kPa AND A FACTORED (φ=0.5) GEOTECHNICAL RESISTANCE AT THE ULTIMATE LIMIT STATE OF 300kPa.

DESIGN DEAD LOADS

ROOF SYSTEM

ROOFING	0.10kPa
INSULATION	0.10kPa
GYPSPUM BOARD DECK BOARD	0.10kPa
1½" STEEL DECKING	0.15kPa
PURLINS	0.10kPa
MAIN STRUCTURE	0.10kPa
M&E FIXTURES & EQUIPMENT	0.25kPa
TOTAL	1.00kPa

FLOOR SYSTEM (MEZZANINE)

2" CONCRETE TOPPING	1.2kPa
8" PRE-CAST HCS	2.6kPa
SUSPENDED CEILING	0.10kPa
M&E FIXTURES & EQUIPMENT	0.25kPa
TOTAL	4.15kPa

CANOPY

ROOFING	0.10 kPa
GYPSPUM SHEATHING	0.10 kPa
1½" STEEL DECKING	0.15 kPa
STEEL STRUCTURE	0.10 kPa
1½" STEEL SOFFIT	0.15 kPa
M&E FIXTURES	0.75 kPa

MATERIAL DESIGN AND CONSTRUCTION

- 1.0 CONCRETE
 - 1.01CONCRETE DESIGN TO CSA A23.3.
 - 1.02CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION TO CSA A 23.1.
 - 1.03TEST METHODS AND STANDARD PRACTICES FOR CONCRETE TO CSA A23.2.
 - 1.04CONCRETE MATERIALS SHALL BE PROVIDED BY AN RMCAO CERTIFIED COMPANY.
 - 1.05CONCRETE MATERIAL SUBMISSIONS SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONCRETE SUBMITTALS SHALL BE IN CONFORMANCE WITH RMCAO STANDARD FORMS.
 - 1.06CONTINUOUS 90mm WIDE BY 40mm DEEP KEYS SHALL BE FORMED INTO CONCRETE AT JOINTS BETWEEN FOOTINGS AND WALLS AND AT ALL CONNECTION JOINTS WHERE REQUIRED.
 - 1.07SLABS, SLABS-ON-GRADE AND EXTERIOR FLATWORKS SHALL BE SEPARATED FROM WALLS, CURBS, PIERS AND SIMILAR VERTICAL SURFACES WITH ASPHALT IMPREGATED FIBERBOARD OR SIMILAR MATERIALS U.N.O. EXPOSED JOINTS SHALL BE SEALED WITH BITUMINOUS SEALANT U.N.O.
- 2.0 PRE-CAST CONCRETE
 - 2.01DESIGN TO CSA A23.3
 - 2.02MATERIALS AND CONSTRUCTION TO CSA A23.4
 - 2.03U.N.O. PRE-CAST SHALL BE DESIGNED FOR LATERAL LOADS DUE TO SEISMIC ACTION

2.04SHOP DRAWINGS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES.

3.0 REINFORCEMENT

- 3.01DEFORMED REBAR, GRADE 400 (R OR W) TO CAN/CSA G30.18.
- 3.02DETAILING, PLACEMENT AND COVER TO CSA A23.1 AND AS NOTED.
- 3.03WELDED WIRE REINFORCEMENT SHALL BE TO THE WRI MANUAL OF STANDARD PRACTICE.
- 3.04SHOP DRAWINGS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES.

4.0 STEEL

- 4.01STEEL DESIGN TO CSA S16.
- 4.02WELDED CONNECTIONS TO CSA W59.
- 4.03BOLTS FOR STEEL CONNECTIONS TO ASTM A325 U.N.O.
- 4.04BOLTS FOR ALL OTHER CONNECTIONS TO ASTM A307M U.N.O.
- 4.05ROLLED OR WELDED STRUCTURAL QUALITY STEEL TO CSA G40.20/G40.21 350W.
- 4.06HOLLOW STRUCTURAL SECTIONS TO CSA G40.20/G40.21 350W U.N.O.
- 4.07ALL STEEL SHALL BE SUPPLIED WITH SHOP PRIME FINISH AND SHALL BE PAINTED U.N.O.
- 4.08SHOP DRAWINGS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES.

5.0 PRE-ENGINEERED STRUCTURAL STEEL

- 5.01SHALL BE DESIGNED TO CSA S16, CSA S136, AND THE ONTARIO BUILDING CODE.
- 5.02SHOP DRAWINGS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES.

6.0 MISCELLANEOUS STEEL

- 6.01MISCELLANEOUS STEEL SHALL INCLUDE STAIRS, HANDRAILS, GUARDRAILS, STEEL STUD WALLS AND SUPPORT STRUCTURES INDICATED, BUT NOT OTHERWISE DETAILED ON THE CONTRACT DRAWINGS. MISCELLANEOUS STEEL SHALL BE DESIGNED TO CSA S16, CSA S136, AND THE ONTARIO BUILDING CODE.
- 6.02SHOP DRAWINGS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES.

7.0 MASONRY

- 7.01MASONRY DESIGN TO CSA S304.1.

PRE-ENG BUILDING REQUIREMENTS:

1. PRE-ENG BUILDING SUPPLIER SHALL CONFIRM FULL EXTENT OF BUILDING REQUIREMENTS WITH THESE AND OTHER CONTRACT DOCUMENTS.
2. U/S 6" STEEL FFE+1" (INCLUDING 1" GAP TO SHM AND GROUT) GL 1 TO 10.
3. U/S 6" STEEL FFE+10"-92" (INCLUDING 1" GAP TO SHM AND GROUT) GL 1 TO 10.
4. U/S PURLINS (T/O STEEL SUBJECT TO PURLIN DESIGN) FFE+14'-0" @ GL A AND J, 4 TO 14.
4. ROOF SLOPE 1:24 (5":12") TO U/S PURLINS FFE+15'-8" @ GL E, 1 TO 4 AND FFE+21'-8" @ GL E, 4 TO 11.
5. PURLIN STRUCTURE SHALL BE PROVIDED TO U/S 1½" STEEL ROOF DECK. FRAMED OPENINGS TO BE PROVIDED FOR TWO (2) HVAC RTU LOCATIONS NEAR GL D AND F, BETWEEN GL 2 AND 3.
6. GIRT STRUCTURE SHALL BE PROVIDED TO 8" OFFSET FOR SUPPORT OF EXTERIOR WALL FROM GL 1, 4, 11, A AND B. SUPPORT SHALL BE PROVIDED FOR T/O STEEL STUD FRAMING @ FFE+11'-0" ALONG GL 1, A TO J, ALONG GL A, 1 TO 4, AND ALONG GL J 1 TO 4. WALL SUPPORT SHALL BE PROVIDED FROM SUPPORT REQUIRED FROM FFE+11'-0", ABOVE AREA OF CMU STRUCTURE.
7. CANOPY SUPPORT SHALL BE PROVIDED AT GL LOCATIONS A1 (2 LOCATIONS), A2, A3, A4, A10, A11, B1, D1, E1, F1, H1, J1 (2 LOCATIONS), J2, J3, AND J4. IF CANOPY STRUCTURE IS PROVIDED WITH PRE-ENG BUILDING PACKAGE, IT SHALL CONFORM TO THE CONFIGURATION AND DIMENSIONS PROVIDED (REFER TO SHEET 104 ETC.).
8. MAIN LATERAL SUPPORT SHALL BE PROVIDED BY MOMENT FRAMES IN THE E-W DIRECTION AND PORTAL FRAMES AT GL A AND GL J (BETWEEN 5 AND 6 AND 9 AND 10 IN THE N-S DIRECTION. ALL OTHER LATERAL STRUCTURE SHALL BE CONFIGURED TO AVOID INDICATED OPENINGS (WINDOWS, DOORS, ETC.). ADDITIONAL FOUNDATIONS MAY BE LOCATED HALF WAY BETWEEN GL 2 AND 3 IF REQUIRED.
9. MAINTAIN INDICATED GRID LINES WITH OFFSETS WHERE REQUIRED.
10. SHOP DRAWINGS SHALL BE PROVIDED PRIOR TO CONFIRMATION OF ANCHOR BOLT DETAILS. ANCHOR BOLT DETAILS SHALL BE PROVIDED BY CONSULTANT TO CONTRACTOR PENDING SHOP DRAWING REVIEW.

7.02CONCRETE MASONRY UNITS (METRIC) TO CSA A165.1 TO A165.3 U.N.O. EXPOSED CORNERS SHALL BE SUPPLIED WITH RADII.

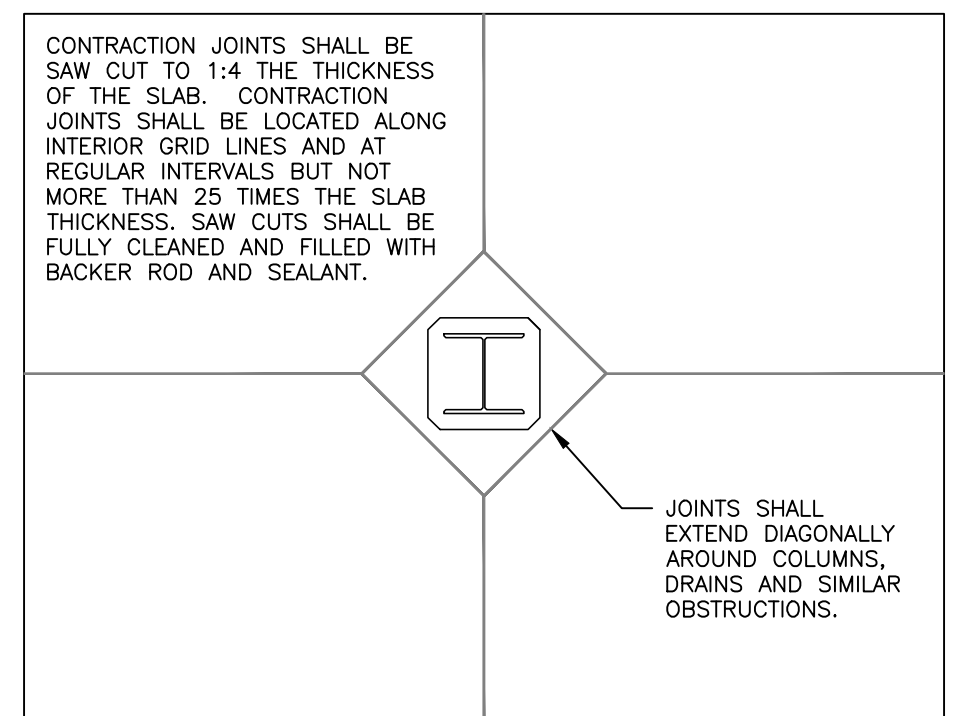
7.03MASONRY MORTAR TO CSA A179.

7.04MASONRY VENEER SHALL BE AS INDICATED AND AS SELECTED BY OWNER.

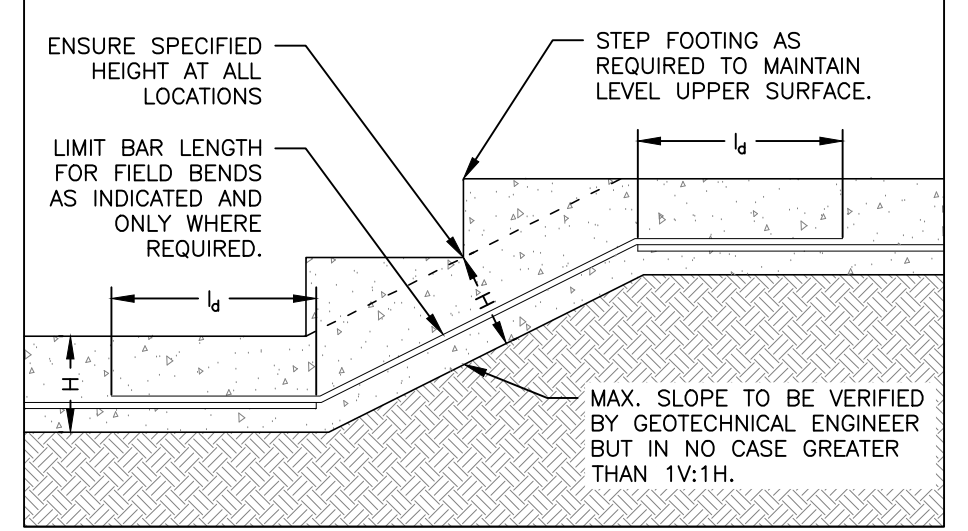
7.05VENEER ANCHORS SHALL BE SPACED AT 600H BY 400V MAX. OR 400H BY 600V MAX. AS APPLICABLE. VENEER ANCHORS SHALL BE STAINLESS STEEL BY BLOK-LOK OR APPROVED EQUAL. ANCHORS SHALL BE SELECTED BASED ON INDICATED BACKING STRUCTURE SIZED FOR FULL THICKNESS OF INSULATION, AIR-SPACE, ETC.

7.06SUBMITTALS SHALL BE PROVIDED TO THE BUILDING ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

SAW CUTTING OF SLABS ON GRADE TYP.



CHANGES IN FOOTING ELEVATION TYP.



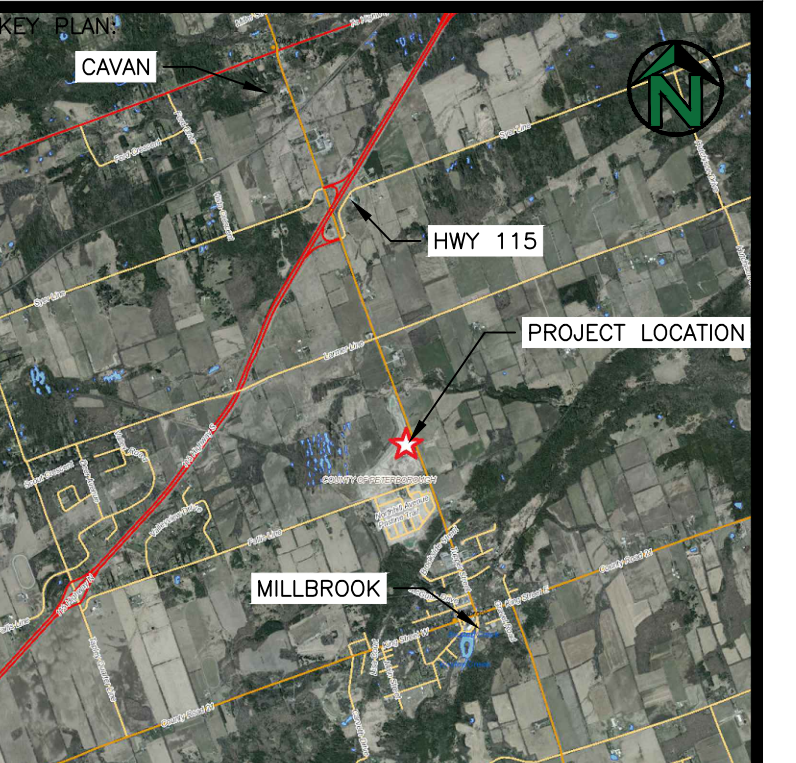
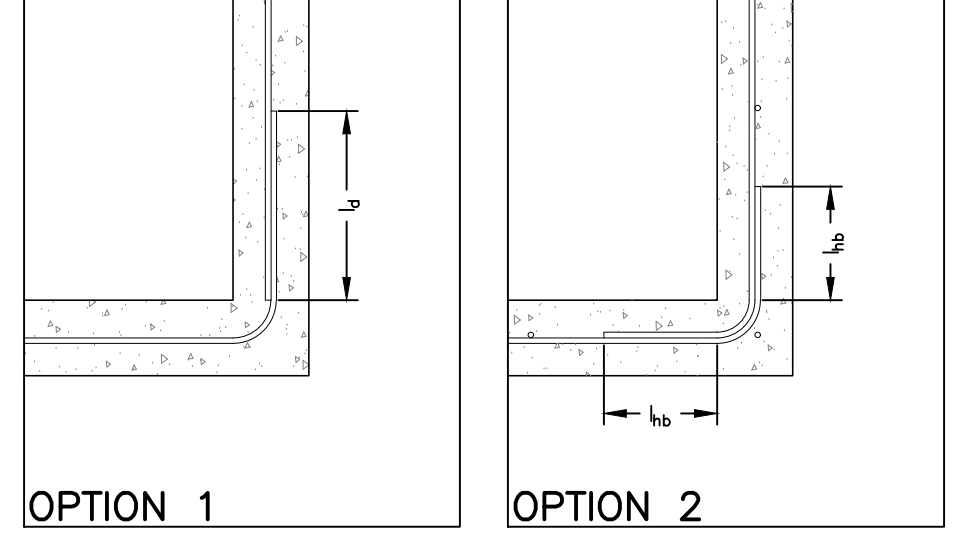
MIN. LAP LENGTHS (l_d) FOR REBAR

	20MPa	25MPa	30MPa	32MPa	35MPa
10M	325	290	265	255	245
15M	485	435	395	385	370
20M	645	580	530	510	490
25M	1010	900	825	800	765
30M	1210	1080	990	955	915
35M	1410	1260	1155	1115	1065

90° TENSION HOOKS (l_{hb}) FOR REBAR

	20MPa	25MPa	30MPa	32MPa	35MPa
10M	224	200	183	177	169
15M	335	300	274	265	254
20M	447	400	365	354	338
25M	559	500	456	442	423
30M	671	600	548	530	507
35M	783	700	639	619	592

REINFORCING LAPS AT WALL CORNERS TYP.



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2. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. THE CONTRACTOR SHALL NOTIFY ALL REQUIRED PARTIES OF ANY INCONSISTENCIES PRIOR TO COMMENCING THE WORK.
3. THE CONTRACTOR SHALL EXAMINE EXISTING SITE CONDITIONS AND REPORT ANY ISSUES PRIOR TO COMMENCING THE WORK.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING THE WORK.
5. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR THE DESIGN, ERECTION, OPERATION, MAINTENANCE AND REMOVAL OF TEMPORARY BRACING, SHORING, HOARDING, AND ANY FACILITIES OR METHODS REQUIRED TO KEEP THE CONSTRUCTION SAFE, PLUMB, LEVEL AND IN TRUE ALIGNMENT AT ALL PHASES OF THE WORK UNTIL COMPLETION.

No.	DATE	BY	REMARKS
0	MAY20-22	THP	ISSUED FOR TENDER



PROJECT:
NEW FIRE STATION No. 1
HIGHLANDS BOULEVARD
MILLBROOK, ON

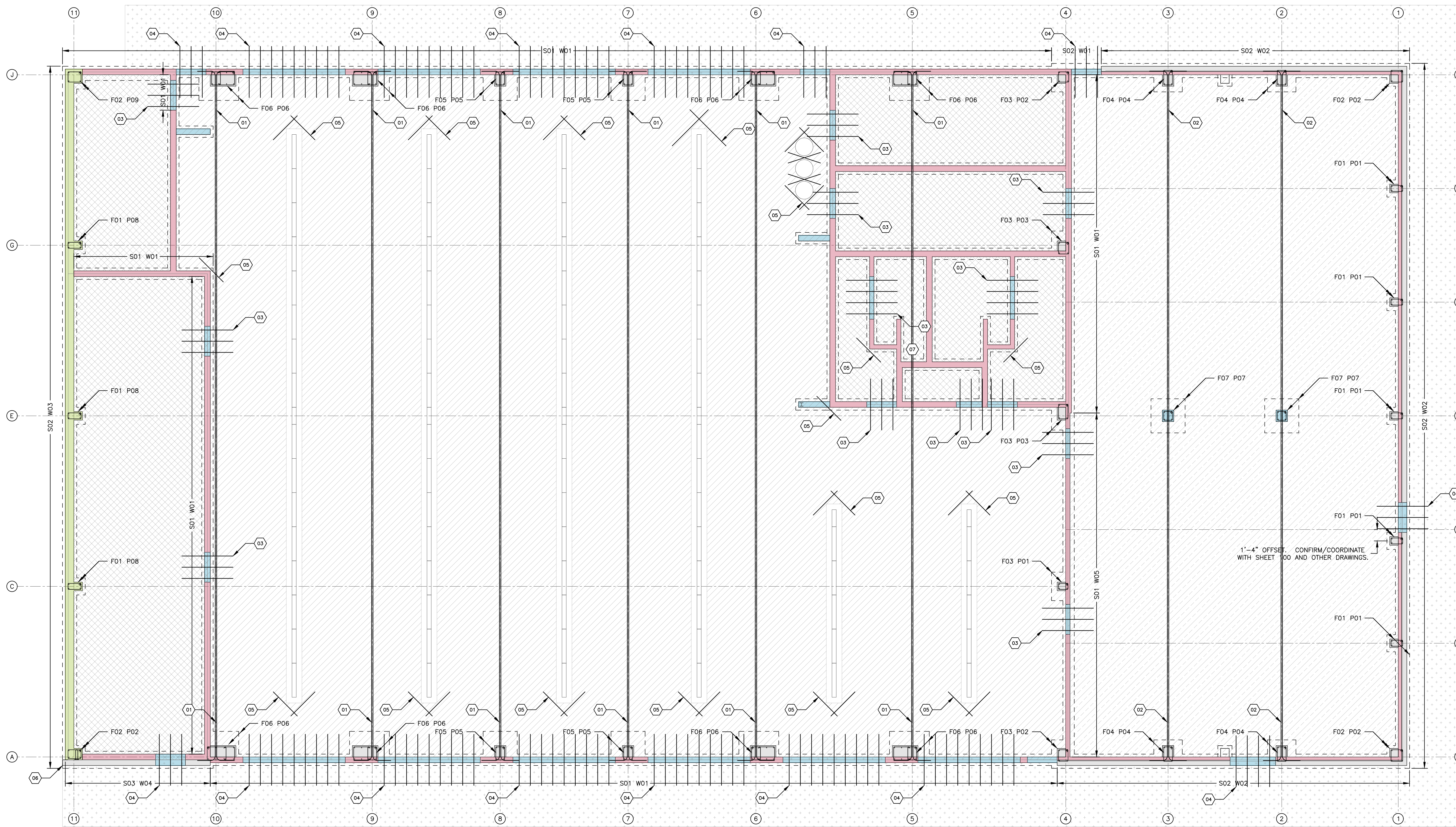
TITLE:
PRE-ENG REQUIREMENTS
GENERAL NOTES AND
STANDARD DETAILS



DESIGNED BY: HSH
DRAWN BY: HSH
APPROVED BY: THP
DATE: SEP-21

PROJECT: 164.21.005
PLOT DATE: MAY19-22

S100



FOUNDATION PLAN
1:75

LEGEND SHEET S101

- T/O CONCRETE AT FFE+0
- T/O CONCRETE AT FFE-9"
- FOUNDATION WALL/CURB T/O CONCRETE AT FFE+8". CONFIRM/COORDINATE WITH MASON. CURB WIDTH MAY BE REDUCED TO MATCH MASONRY WIDTH WHERE APPLICABLE.
- FOUNDATION WALL T/O CONCRETE AT FFE+118 $\frac{1}{2}$ ". CONFIRM/COORDINATE FINISHED HEIGHT WITH HCS SUPPLIER TO ENSURE PROPER PLACEMENT OF BEARING PADS ETC.
- 200 (8") INTERIOR SOG. FL01 CONCRETE. REINFORCE WITH 15M@500 E/W. CONTRACTION JOINTS INSTALLED AT NOT MORE THAN 5000 (16'-8") O.C.
- 165 (6 $\frac{1}{2}$ ") INTERIOR SOG. FL01 CONCRETE. REINFORCE WITH 10M@300 E/W. CONTRACTION JOINTS INSTALLED AT NOT MORE THAN 4100 (13'-4") O.C. THICKEN SLAB TO 200 (8") WHERE THE REBAR REQUIRED.
- 150 (6") INTERIOR SOG. FL01 CONCRETE. REINFORCE WITH 10M@300 E/W. CONTRACTION JOINTS INSTALLED AT NOT MORE THAN 3750 (12'-2") O.C. THICKEN SLAB TO 200 (8") WHERE THE REBAR REQUIRED.
- 200 (8") EXTERIOR SOG. FL02 CONCRETE. TOOLED CONTRACTION JOINTS AT NOT MORE THAN 3000 O.C. FORMED EXPANSION JOINTS CENTRED BETWEEN GARAGE DOORS AND AT NOT MORE THAN 6000 O.C.

SCHEDULE S-01 - CONCRETE SPECIFICATIONS

I.D.	MAIN USE	EXPOSURE CLASS	MAX. WATER TO CEMENTING MATERIALS RATIO	MINIMUM COMPRESSIVE STRENGTH				AIR CONTENT	CURING CSA A23.1 TABLE 20	AGGREGATE	CLASS/FLOOR FINISH CSA A23.1 TABLE 22	ADMIX
				3d	7d	28d	56d					
FT01	FOOTINGS, INTERIOR PIERS	N	0.65	8MPa	N/A	20MPa	N/A	0	1 (3d)	20mm	N/A	
FL01	GROUND FLOOR SLAB ON GRADE	C-4	0.55	10MPa	N/A	25MPa	N/A	0	1 (3d)	20mm	B/STEEL TROWEL	
FL02	EXTERIOR FLATWORK	C-2	0.45	N/A	22.4MPa	32MPa	N/A	5% TO 8%	2 (7d)	20mm	BROOM	
FL03	TOPPING SLAB	N	0.55	10MPa	17.5MPa	25MPa	N/A	0	1 (3d)	10mm	B/STEEL TROWEL	
FW01	FOUNDATION WALLS	F-2	0.55	10MPa	N/A	25MPa	N/A	4% TO 7%	1 (3d)	20mm	N/A	
SD01	GENERAL USE	N	0.65	8MPa	N/A	20MPa	N/A	0	1 (3d)	20mm	N/A	
RW01	RETAINING WALL	C-1	0.40	14MPa	24.5MPa	35MPa	N/A	5% TO 8%	2 (7d)	20mm	N/A	

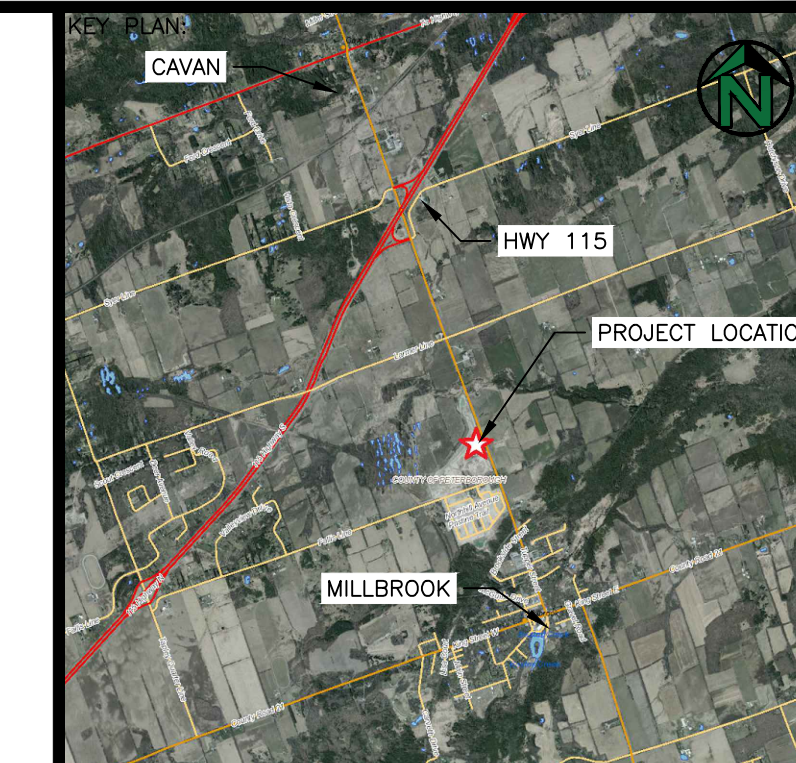
KEY NOTES SHEET S101

- (01) 2-30M REBAR TENSION STEEL CONT. BETWEEN OPPOSING PIERS. SIZE TO BE CONFIRMED DURING PRE-ENG BUILDING SHOP DRAWING REVIEW. DO NOT FIELD BEND BARS. PROVIDE COUPLERS, BAR-LOCK "L-SERIES" COUPLERS BY DAYTON SUPERIOR CANADA LTD. OR APPROVED EQUAL, WHERE REQUIRED TO FACILITATE OTHER WORK.
- (02) 2-20M REBAR TENSION STEEL CONT. BETWEEN OPPOSING PIERS. SIZE TO BE CONFIRMED DURING PRE-ENG BUILDING SHOP DRAWING REVIEW. DO NOT FIELD BEND BARS. PROVIDE COUPLERS, BAR-LOCK "L-SERIES" COUPLERS BY DAYTON SUPERIOR CANADA LTD. OR APPROVED EQUAL, WHERE REQUIRED TO FACILITATE OTHER WORK.
- (03) 1800 (6'-0") LONG 20M@400 REBAR AT OPENING AND/OR AS INDICATED. BEND REBAR WHERE REQUIRED TO FACILITATE SLOPED SOG.
- (04) 1800 (6'-0") LONG 20M@400 STAINLESS STEEL REBAR AT ALL EXTERIOR OPENINGS. BEND REBAR WHERE REQUIRED TO FACILITATE SLOPED SOG.
- (05) 1200 (4'-0") LONG 20M CENTRED AT CORNERS (TRENCH DRAINS, BETWEEN HATCHES, AND AS INDICATED).
- (06) EXTEND 8" FOUNDATION WALL 4" BEYOND CORNER FOR MASONRY VENEER SUPPORT.
- (07) OFFSET THE REBAR TO FACILITATE MECHANICAL OPENINGS WHERE REQUIRED. REFER TO MECH DRAWINGS. OFFSETS SHALL BE REVIEWED BY ENGINEER PRIOR TO CONCRETE PLACEMENT.

SCHEDULE S-02 - FOUNDATION FOOTINGS

I.D.	LOCATION	WIDTH	LENGTH	MIN. HEIGHT	TOP OF FOOTING	WIDTH REBAR	LENGTH REBAR	CONCRETE	NOTES
S01	STRIP FOOTING	16"	CONT.	10"	FFE-50"	N/A	2-20M CONT.	FT01	
S02	STRIP FOOTING	20"	CONT.	10"	FFE-50"	N/A	3-20M CONT.	FT01	
S03	STRIP FOOTING	24"	CONT.	10"	FFE-50"	N/A	3-20M CONT.	FT01	
S04	STRIP FOOTING	14"	CONT.	10"	FFE-50"	N/A	2-20M CONT.	FT01	
F01	EXTERIOR FOOTING	32"	24"	10"	FFE-50"	3-20M 26" LONG	2-20M 18" LONG*	FT01	
F02	CORNER FOOTING	32"	32"	10"	FFE-50"	2-20M 26" LONG*	2-20M 26" LONG*	FT01	
F03	CORNER FOOTING	40"	32"	10"	FFE-50"	2-20M 34" LONG*	2-20M 26" LONG*	FT01	
F04	FRAME END FOOTING	40"	40"	10"	FFE-50"	5-20M 36" LONG	3-20M 34" LONG*	FT01	
F05	FRAME END FOOTING	48"	48"	10"	FFE-50"	6-20M 42" LONG	4-20M 42" LONG*	FT01	
F06	FRAME END FOOTING	48"	56"	10"	FFE-50"	7-20M 42" LONG	4-20M 50" LONG*	FT01	
F07	INTERIOR FOOTING	48"	48"	10"	FFE-50"	6-20M 42" LONG	6-20M 42" LONG	FT01	

NOTE: WHERE ADJACENT TO STRIP FOOTINGS, DIMENSIONS INCLUDE ADJACENT WIDTH AND/OR LENGTH AS APPLICABLE. *NOT INCLUDING ADJACENT STRIP FOOTING REBAR PLACED CONT. THROUGH FOOTING.



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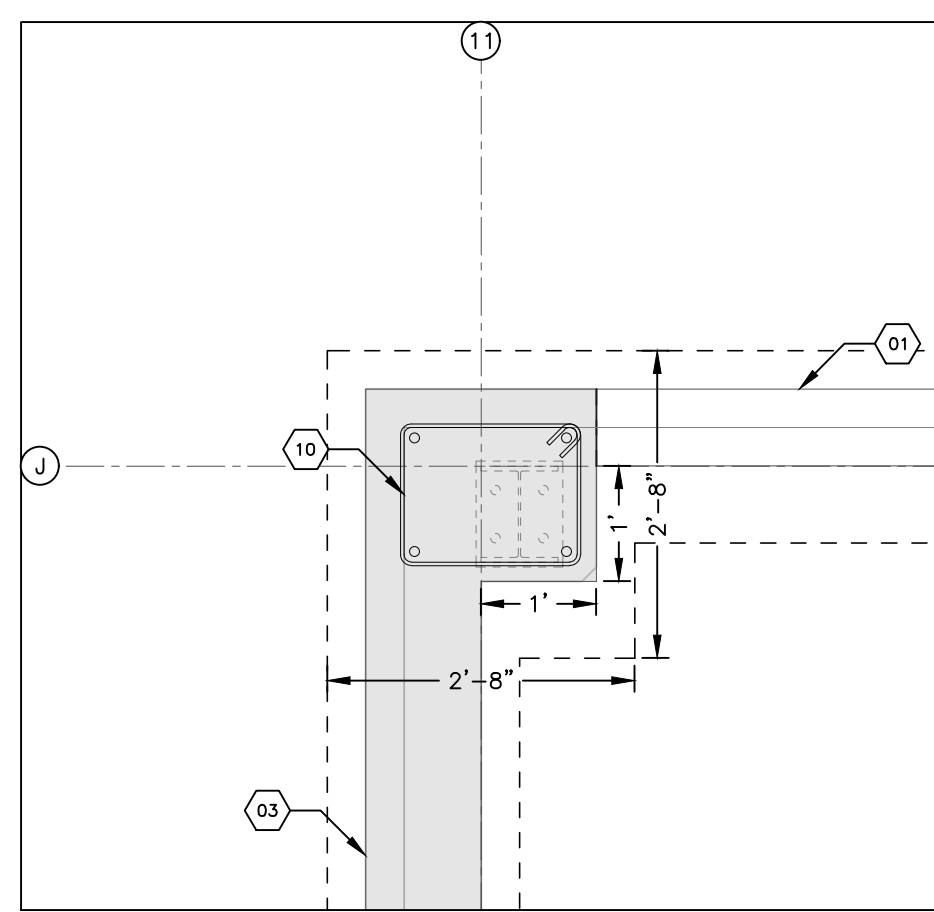
FOUNDATION PLAN

DESIGNED BY: HSH
DRAWN BY: HSH
APPROVED BY: THP
DATE: MAR-22

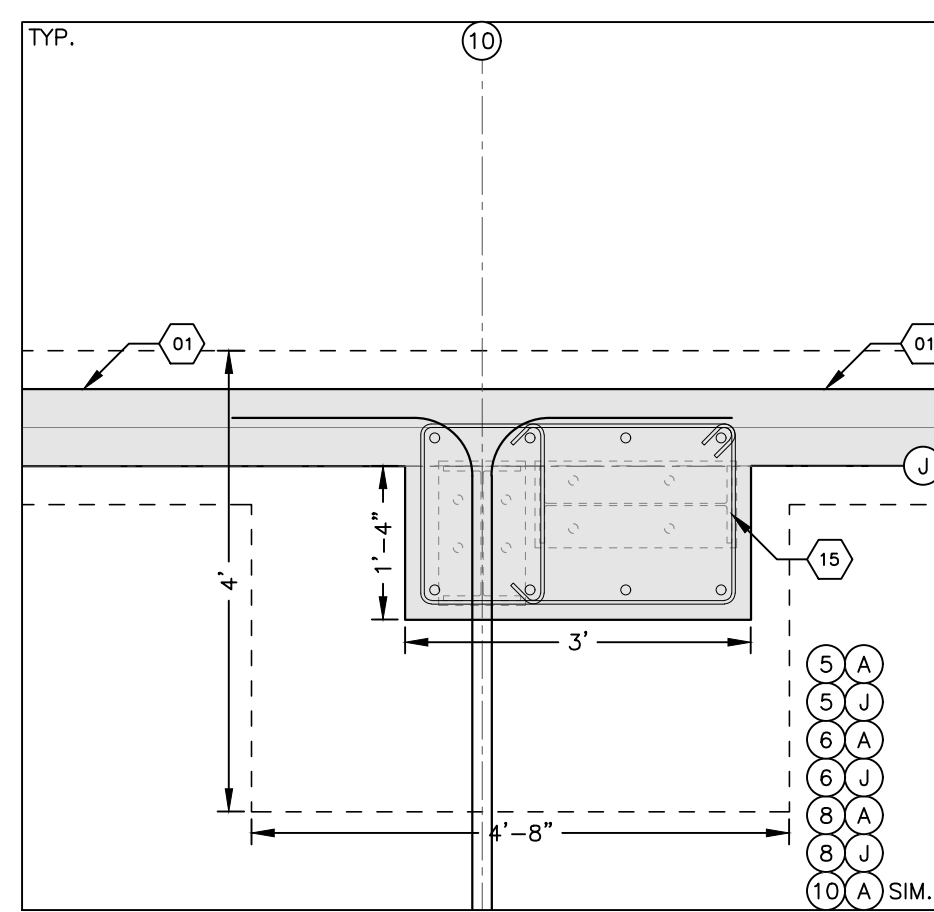


PROJECT:
164.21.005
PLOT DATE:
MAY19-22

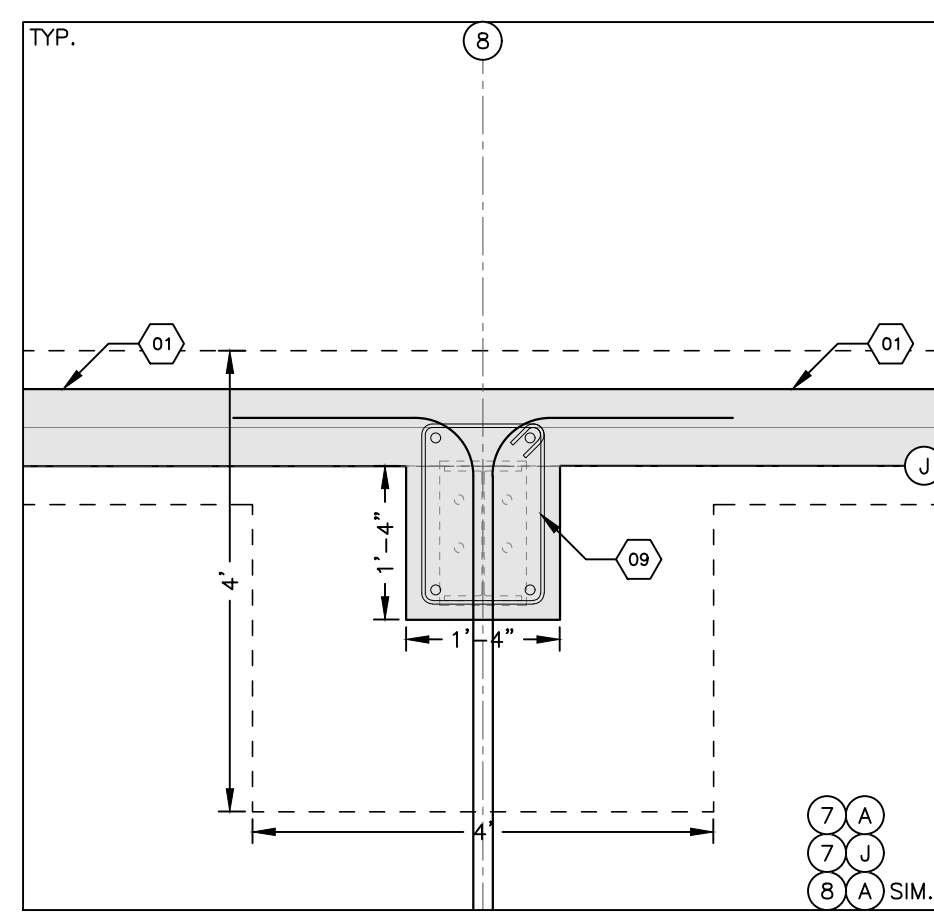
S101



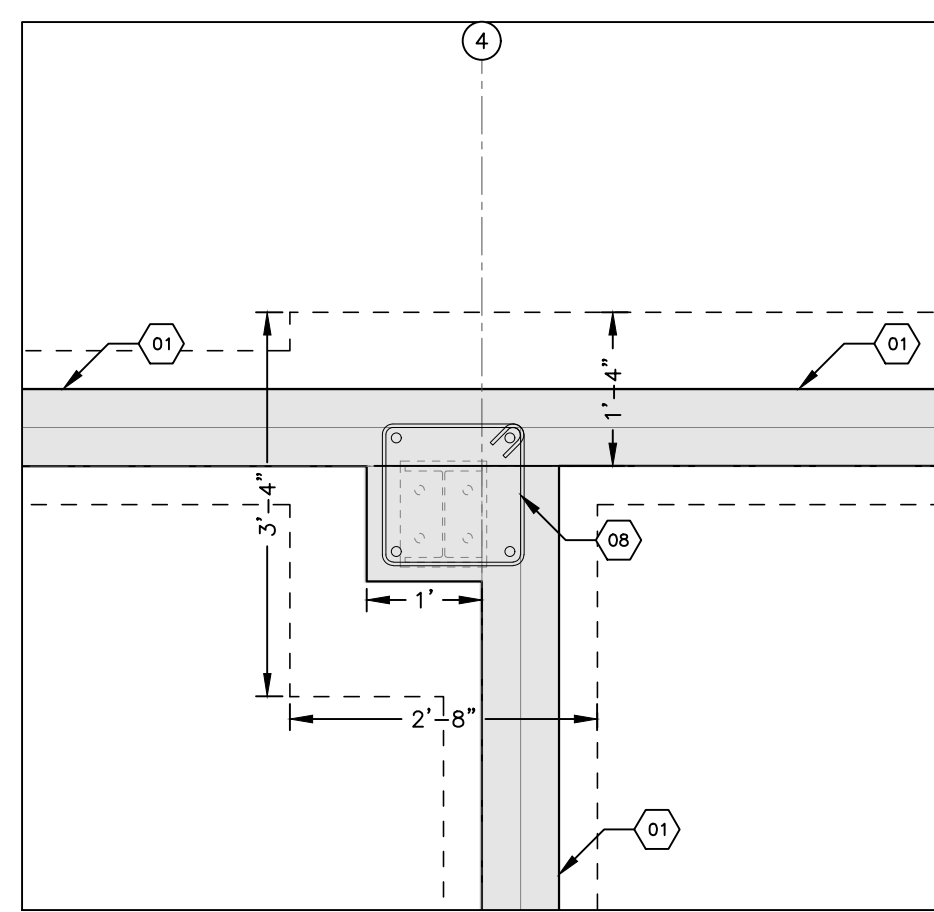
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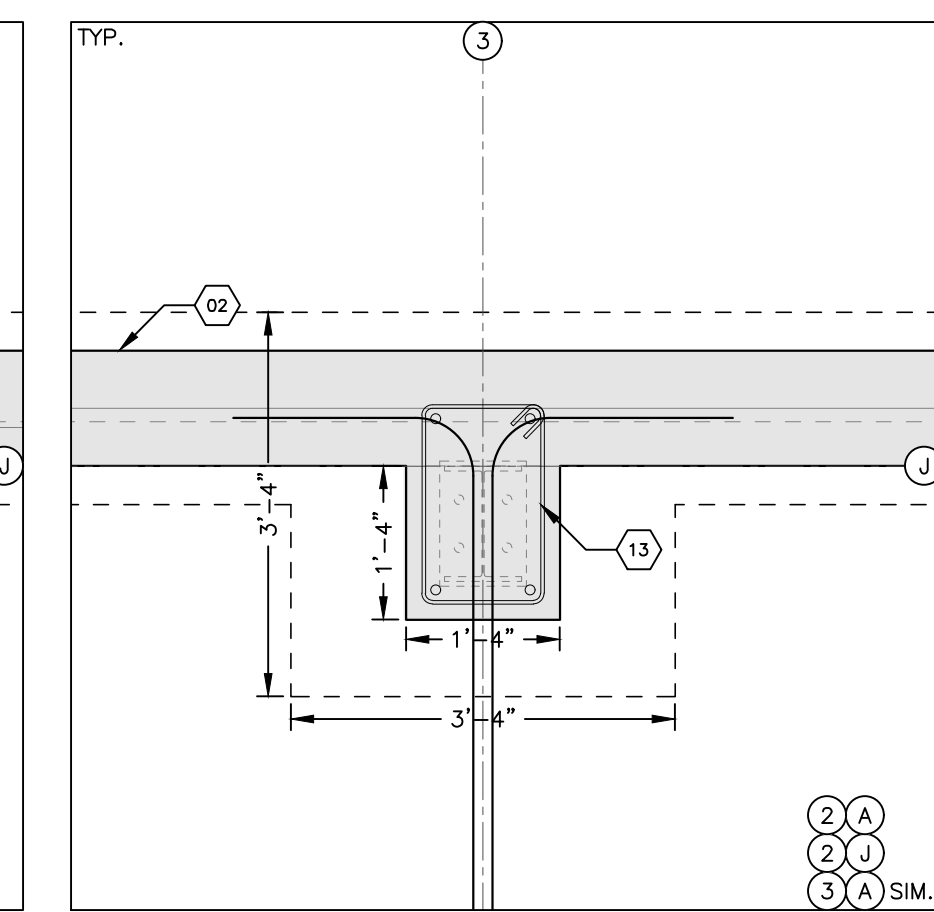
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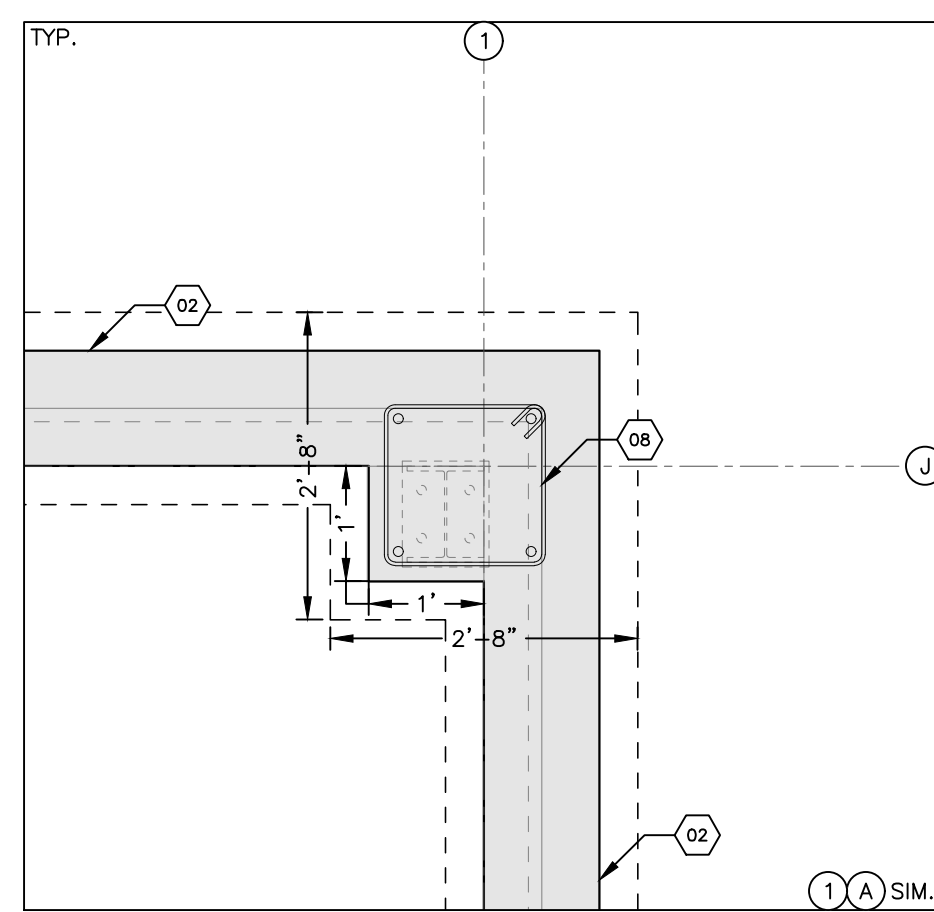
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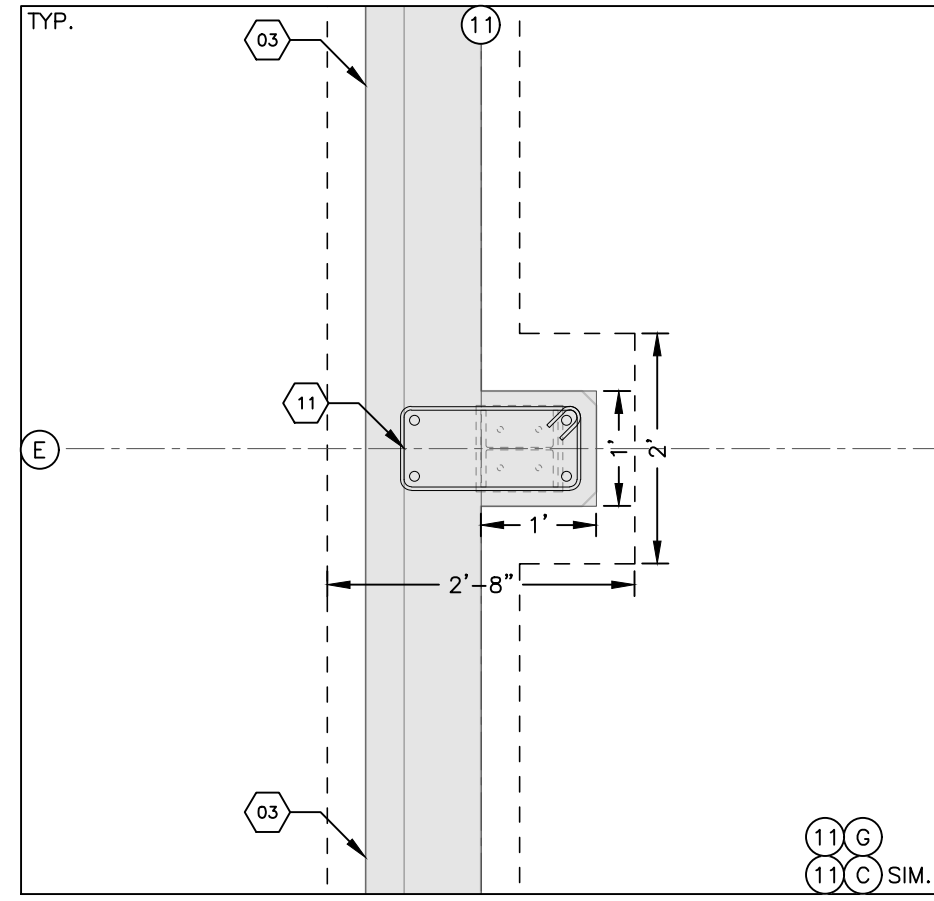
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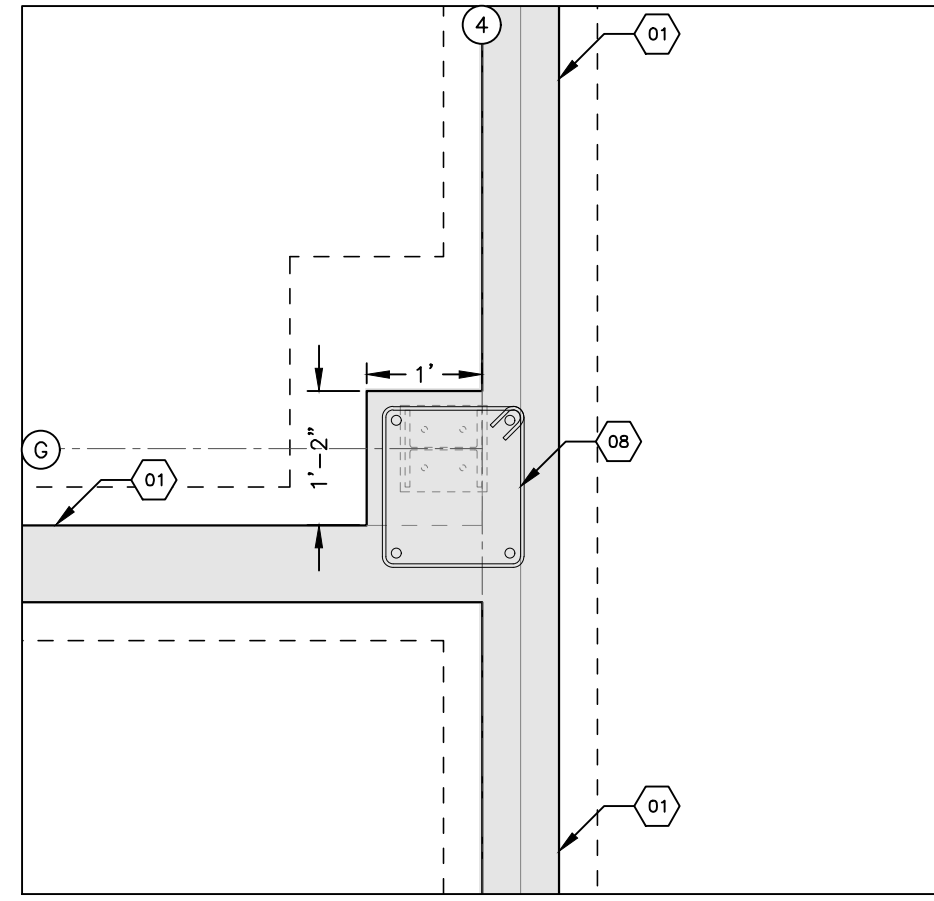
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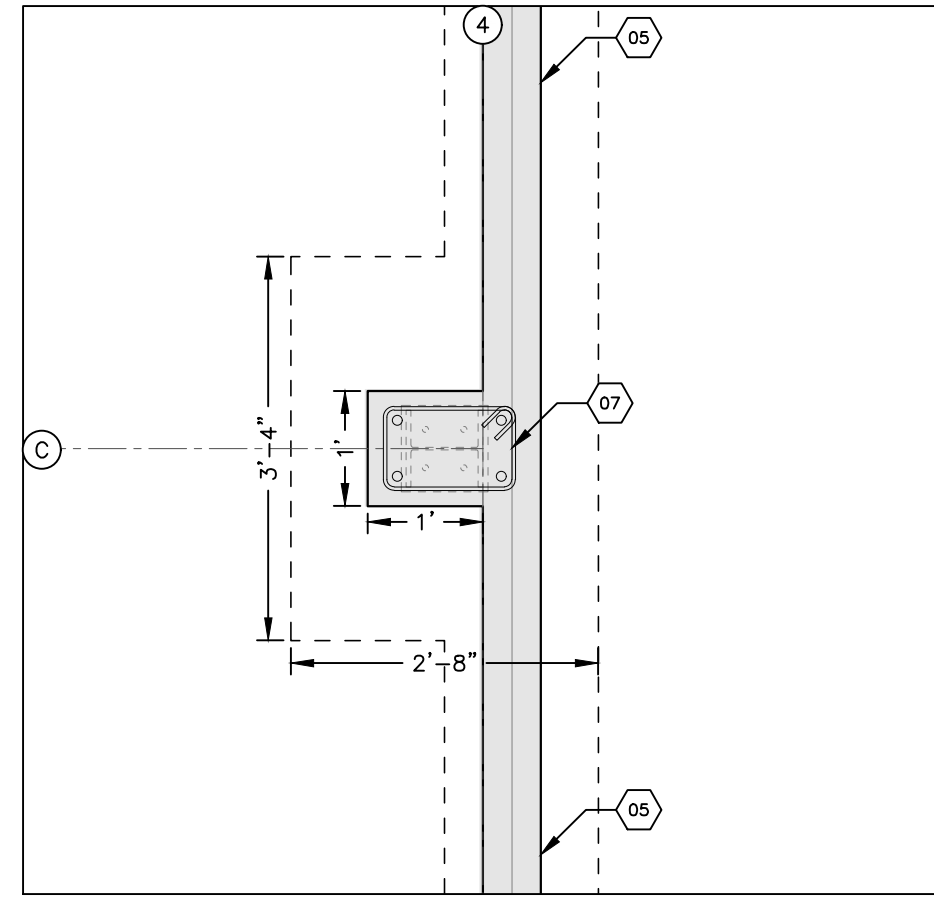
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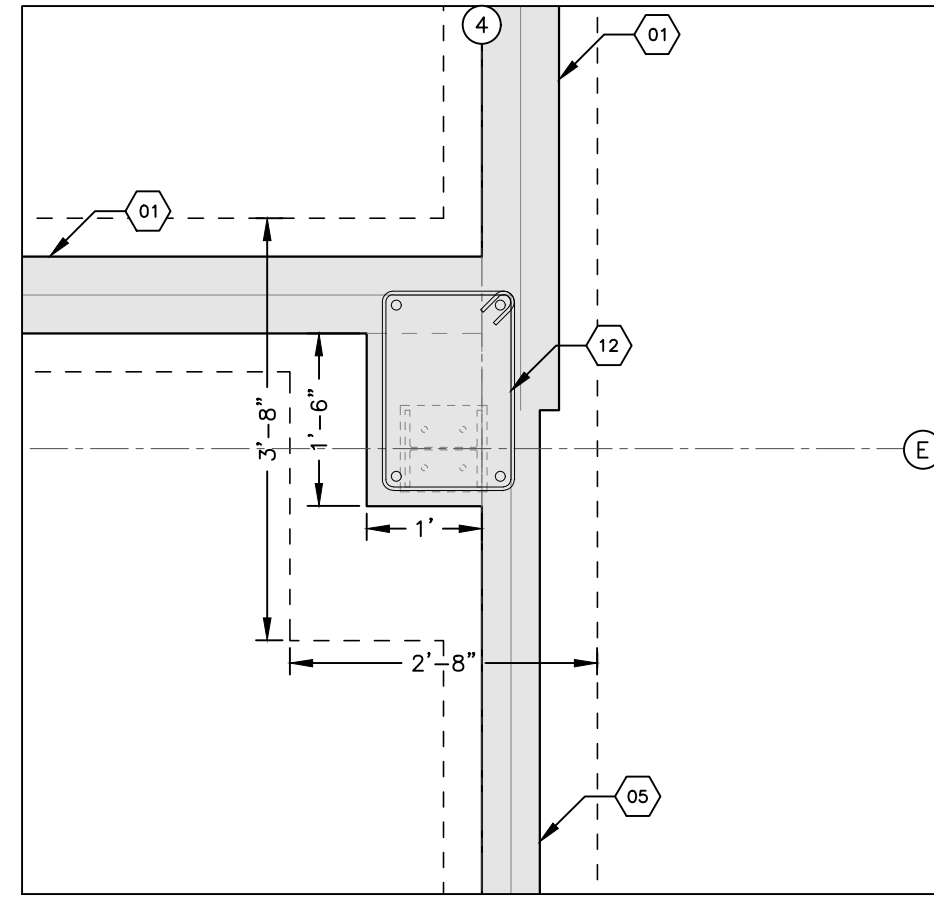
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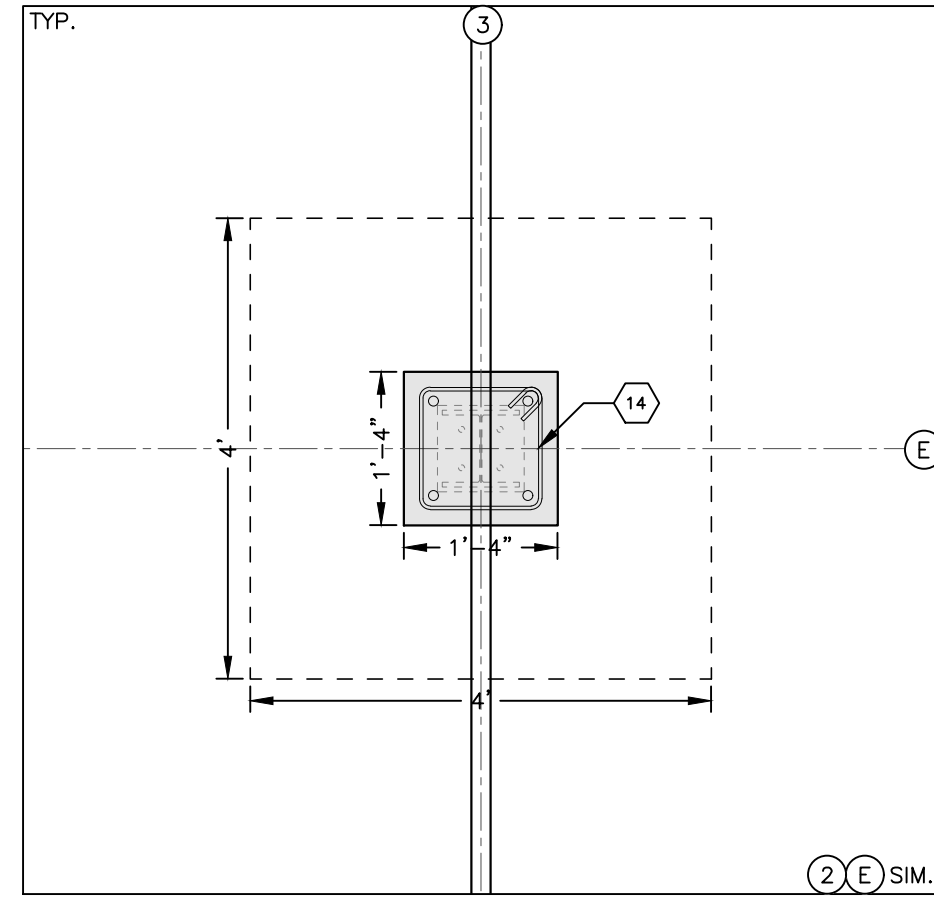
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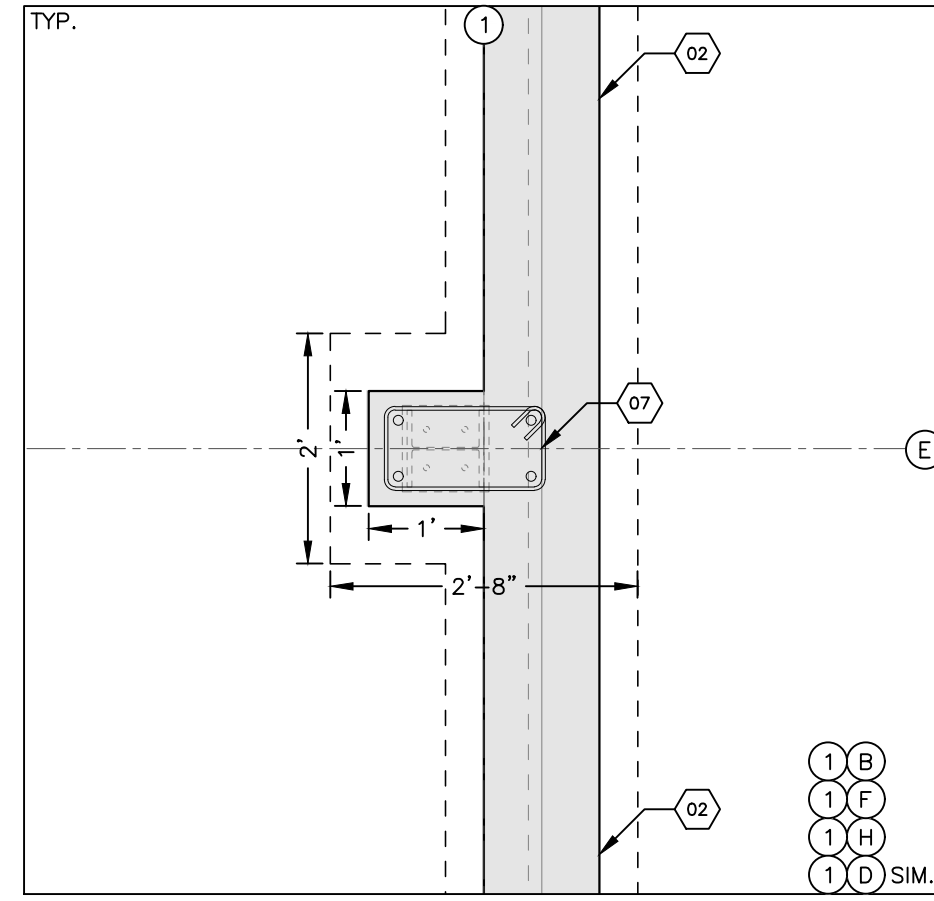
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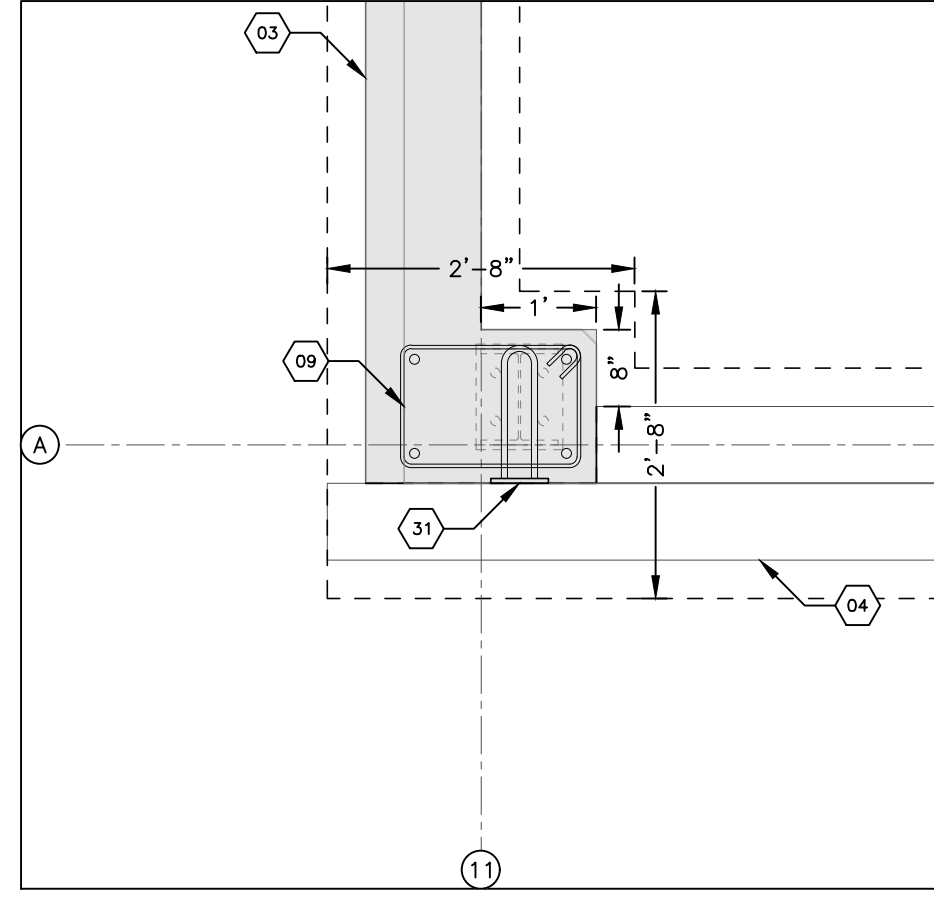
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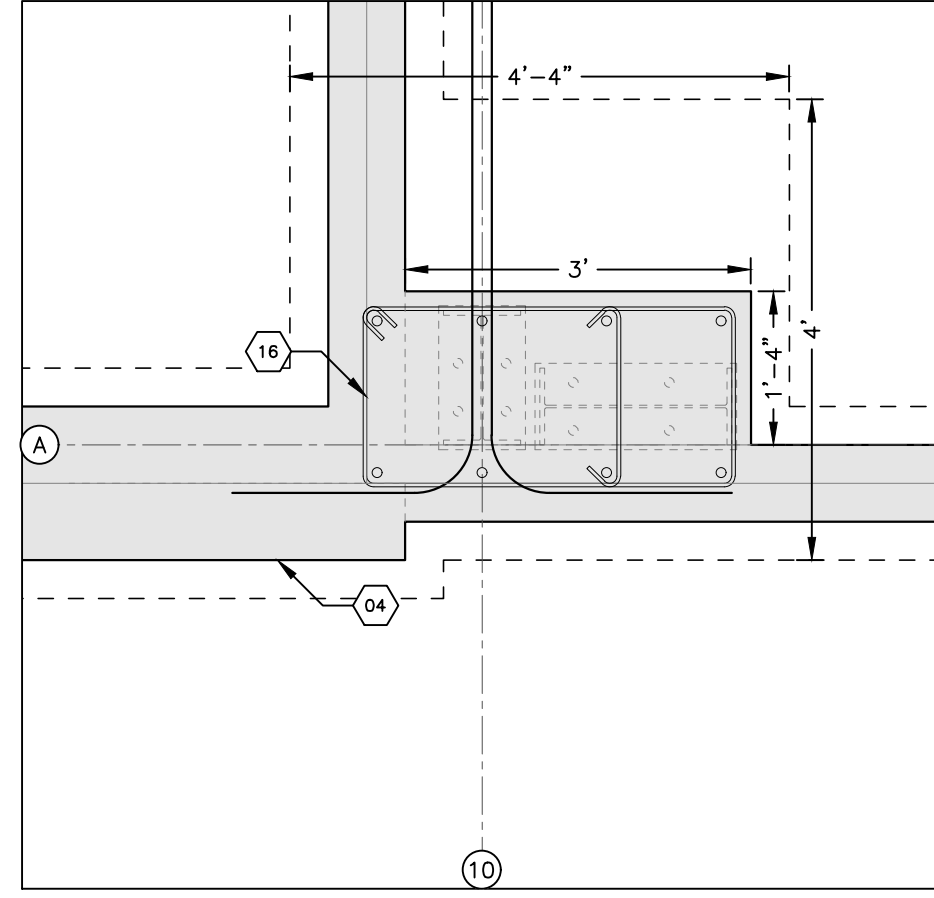
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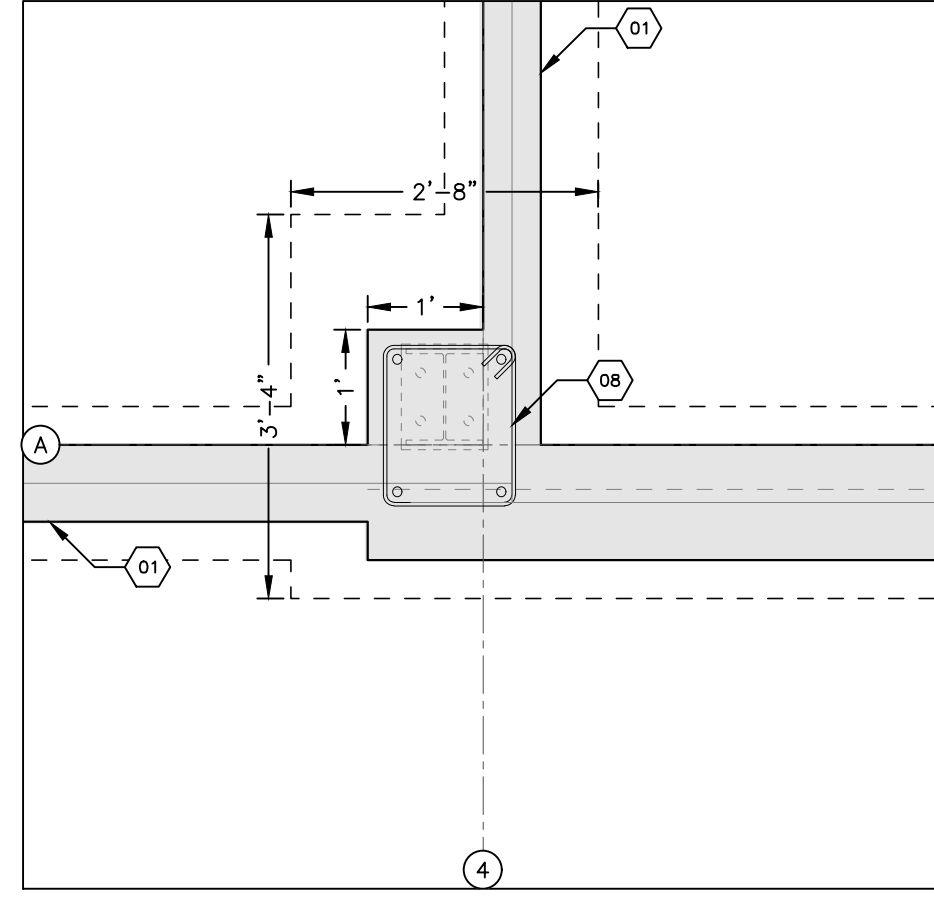
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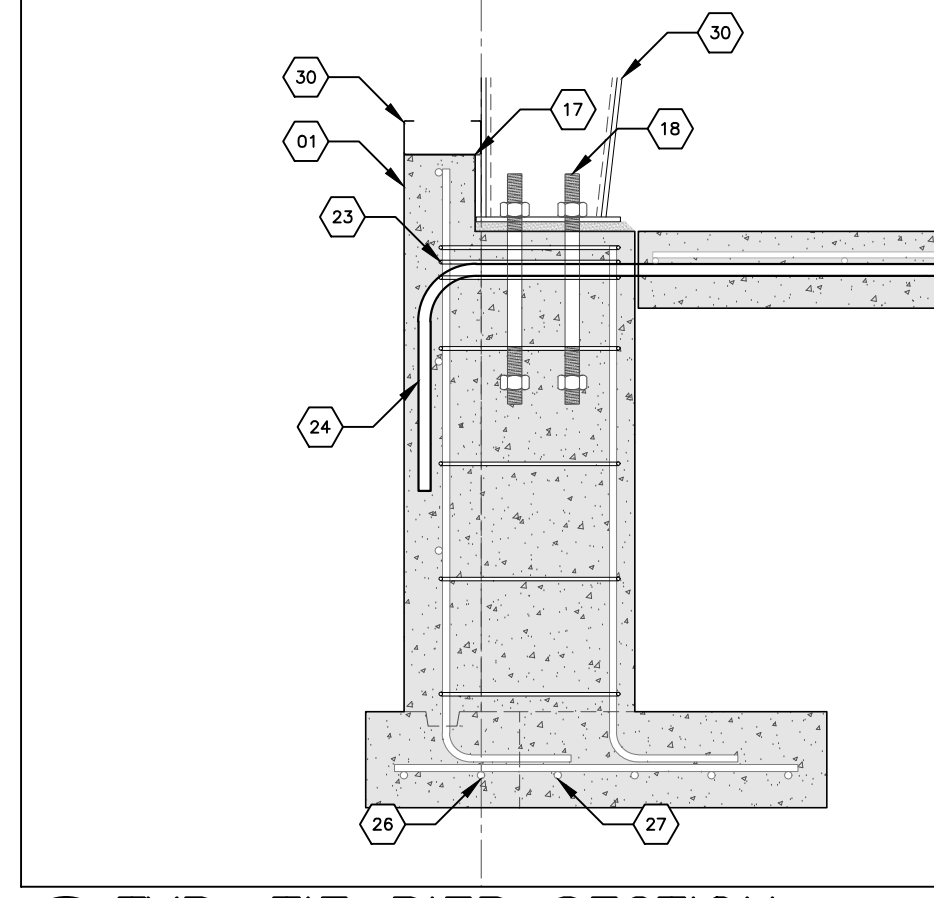
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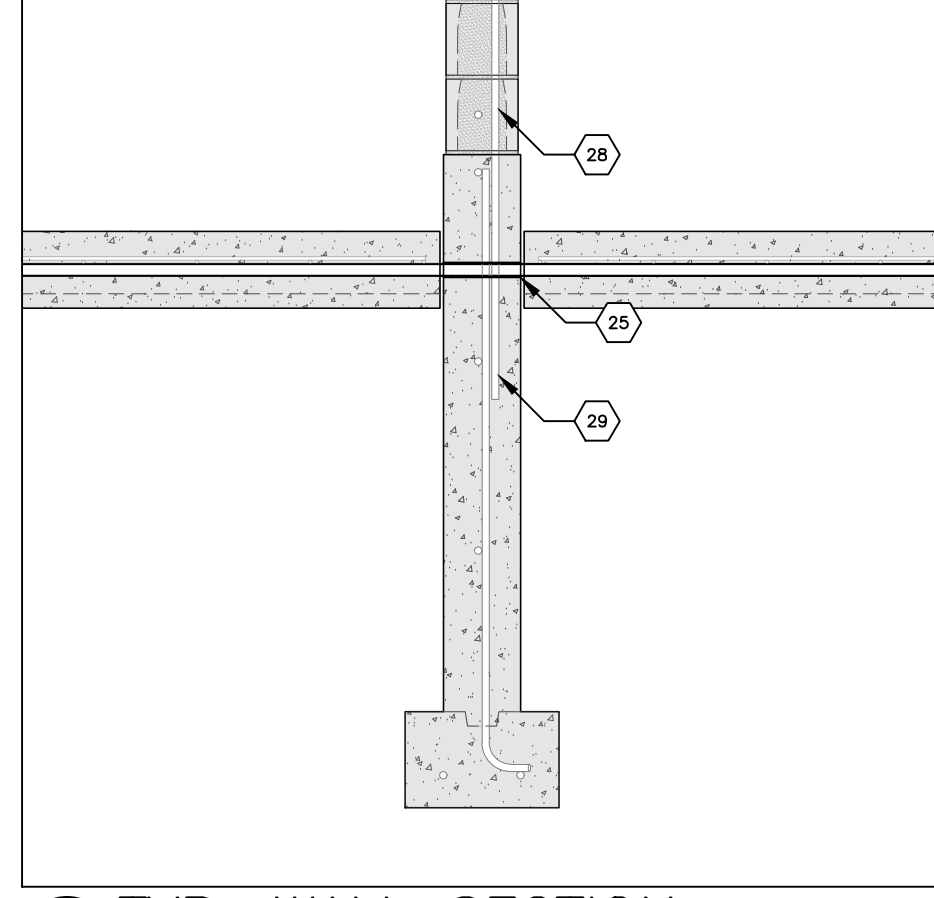
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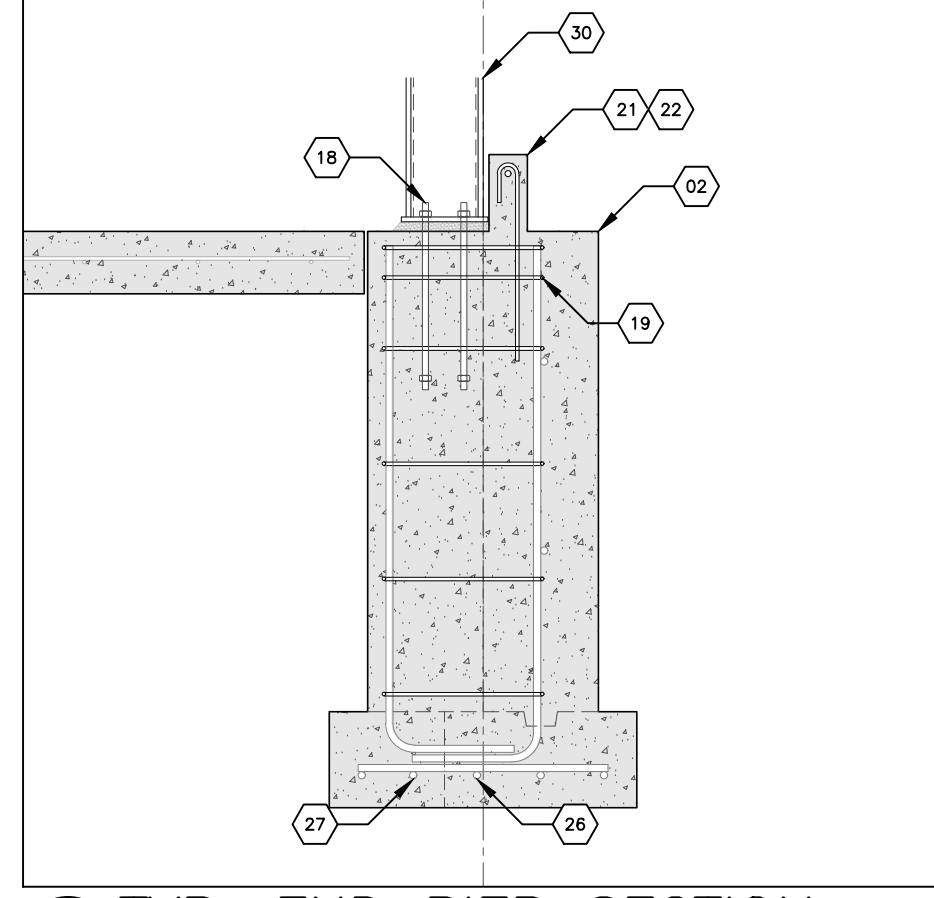
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1 TYP. TIE PIER SECTION
S102 1:20



2 TYP. WALL SECTION
S102 1:20



3 TYP. END PIER SECTION
S102 1:20

KEY NOTES SHEET S102

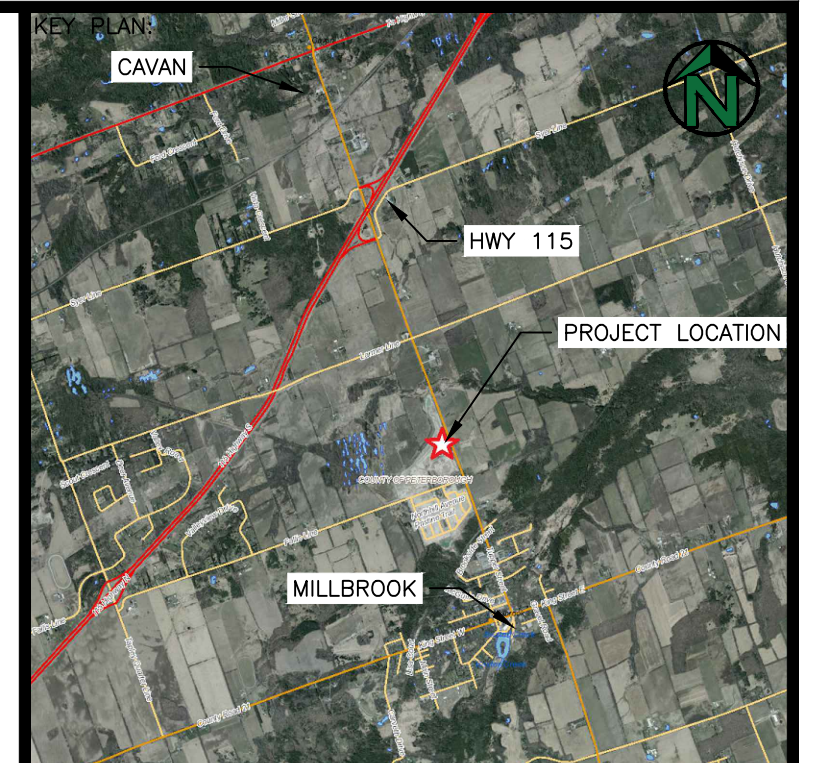
- (01) W01 PER SCHEDULE S-03 ON S102
- (02) W02 PER SCHEDULE S-03 ON S102
- (03) W03 PER SCHEDULE S-03 ON S102
- (04) W04 PER SCHEDULE S-03 ON S102
- (05) W05 PER SCHEDULE S-03 ON S102
- (06) 40 (1/2") CONCRETE COVER TO 10M TIE REBAR TYP. U.N.O.
- (07) INSIDE DIMENSION 8" X 14" FOR THE REBAR.
- (08) INSIDE DIMENSION 14" X 14" FOR THE TIE REBAR.
- (09) INSIDE DIMENSION 12" X 18" FOR THE REBAR.
- (10) INSIDE DIMENSION 14" X 18" FOR THE REBAR.
- (11) INSIDE DIMENSION 8" X 18" FOR THE REBAR.
- (12) INSIDE DIMENSION 14" X 20" FOR THE REBAR.
- (13) INSIDE DIMENSION 12" X 20" FOR THE REBAR.
- (14) INSIDE DIMENSION 12" X 12" FOR THE REBAR.
- (15) INSIDE DIMENSION 32" X 18" + CROSS TIE FOR THE REBAR.
- (16) INSIDE DIMENSION 38" X 18" + CROSS TIE FOR THE REBAR.
- (17) MODIFY CURB (AND BLOCK ABOVE) WERE REQUIRED TO ACCOMMODATE PRE-ENG BUILDING STEEL.
- (18) BUILDING ANCHORS SIZES TO BE PROVIDED WITH PRE-ENGINEERED BUILDING SHOP DRAWINGS. EMBEDMENT DETAILS TO BE PROVIDED BY BUILDING ENGINEER BASED ON INFORMATION PROVIDED WITH SHOP DRAWING SUBMITTAL.
- (19) PROVIDE TWO (2) TIE REBAR WITHIN 125mm OF TOP OF PIER.
- (20) U/S PRE-ENG STEEL R @ FFE +1". INSTALL NON-SHRINK GROUT BETWEEN T/O PIER AND UNDERSIDE OF STEEL.
- (21) 4" WIDE CURB TO FFE+8.
- (22) PROVIDE 1-15M H CONT. AT TOP OF CURB. PROVIDE 30" LONG 10M@500 REBAR C/W STANDARD 180° HOOK.
- (23) PROVIDE THREE (3) TIE REBAR WITH AT CROSS TIE LOCATIONS WITH TOP TWO TIES WITHIN 125mm OF TOP OF PIER.
- (24) PROVIDE 90° TENSION HOOK AT END OF CROSS TIE REBAR. ORIENT STEEL PARALLEL WITH EITHER H OR V WALL STEEL. ENSURE MIN. 40mm (1 1/2") CONCRETE COVER.

- (25) PROVIDE PVC SLEEVE THROUGH WALLS FOR CROSS TIE INSTALLATION.
- (26) STRIP FOOTING REBAR CONT. THROUGH PAD FOOTING PER SCHEDULE S-02.
- (27) PAD FOOTING REBAR PER SCHEDULE S-02
- (28) CMU REBAR PER SCHEDULE S-06.
- (29) ENSURE FULL TENSION LAP TO FOUNDATION REBAR.
- (30) STRUCTURE BY PRE-ENG BUILDING SUPPLIER. BASE PLATE ANCHORS TO BE CONFIRMED DURING SHOP DRAWING REVIEW PROCESS.
- (31) 6"x6"x5/8" R FOR CANOPY CONNECTION. REFER TO KEY NOTE 13 ON SHEET S104 FOR ADDITIONAL INFORMATION.

SCHEDULE S-03 - FOUNDATION WALLS AND PIERS

I.D.	LOCATION	WIDTH	LENGTH	TOP OF CONCRETE	TOP OF FOOTING	HORIZONTAL REBAR	VERTICAL REBAR	CONCRETE	NOTES
W01	FOUNDATION WALLS	8"	CONT.	FFE+8"		15M@400mm	15M@400	FW01	DROP TOC TO FFE-9" AT DOOR OPENINGS
W02	FOUNDATION WALLS	12"	CONT.	FFE+0		15M@400mm	15M@400	FW01	DROP TOC TO FFE-9" AT DOOR OPENINGS. 4" WIDE CURB TO FFE+8.
W03	FOUNDATION WALLS	12"	CONT.	FFE+118 1/2"		2-LAYERS 15M@400mm	2-LAYERS 15M@400mm	FW01	T/O BEARING PADS BY HCS SUPPLIER TO BE SET
W04	FOUNDATION WALLS	16"	CONT.	FFE+8"		2-LAYERS 15M@400mm	2-LAYERS 15M@400mm	FW01	
W05	NON-LOAD BEARING WALLS	6"	CONT.	FFE+8"		15M@400mm	15M@400	FW01	DROP TOC TO FFE-9" AT DOOR OPENINGS
P01	WALL POSTS	12"	12"	FFE+0		10M TIES @300mm	4-20M	FW01	
P02	CORNER FRAME ENDS	12"	12"	FFE+0		10M TIES @300mm	4-20M	FW01	
P03	WALL POSTS	12"	*	FFE+0		10M TIES @300mm	4-20M	FW01	
P04	FRAME ENDS	16"	12"	FFE+0		10M TIES @300mm	4-20M	FW01	
P05	FRAME ENDS	16"	12"	FFE+0		10M TIES @300mm	4-20M	FW01	
P06	FRAME ENDS + PORTAL	16"	36"	FFE+0		10M TIES @300mm	4-20M	FW01	
P07	CENTRE POSTS	16"	16"	FFE-9"		10M TIES @300mm	4-20M	FW01	
P08	END-WALL POSTS	12"	12"	FFE+118 1/2"		10M TIES @300mm	4-20M	FW01	
P09	CORNER FRAME END	12"	12"	FFE+118 1/2"		10M TIES @300mm	4-20M	FW01	

NOTE: WHERE ADJACENT TO FOUNDATION WALLS, DIMENSIONS DO NOT INCLUDE ADJACENT WIDTH AND/OR LENGTH AS APPLICABLE. * REFER TO PLAN DETAILS ON S102 FOR LENGTH DIMENSIONS.



GENERAL NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS IN CONFORMANCE WITH THE ONTARIO BUILDING CODE, THE OCCUPATIONAL HEALTH AND SAFETY ACT AND ALL OTHER GOVERNING REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. THE CONTRACTOR SHALL NOTIFY ALL REQUIRED PARTIES OF ANY INCONSISTENCIES PRIOR TO COMMENCING THE WORK.
3. THE CONTRACTOR SHALL EXAMINE EXISTING SITE CONDITIONS AND REPORT ANY ISSUES PRIOR TO COMMENCING THE WORK.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING THE WORK.
5. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR THE DESIGN, ERECTION, OPERATION, MAINTENANCE AND REMOVAL OF TEMPORARY BRACING, SHORING, HOARDING, AND ANY FACILITIES OR METHODS REQUIRED TO KEEP THE CONSTRUCTION SAFE, PLUMB, LEVEL AND IN TRUE ALIGNMENT AT ALL PHASES OF THE WORK UNTIL COMPLETION.

No.	DATE	BY	REMARKS
0	MAY20-22	THP	ISSUED FOR TENDER



PROJECT:
**NEW FIRE STATION No. 1
HIGHLANDS BOULEVARD
MILLBROOK, ON**

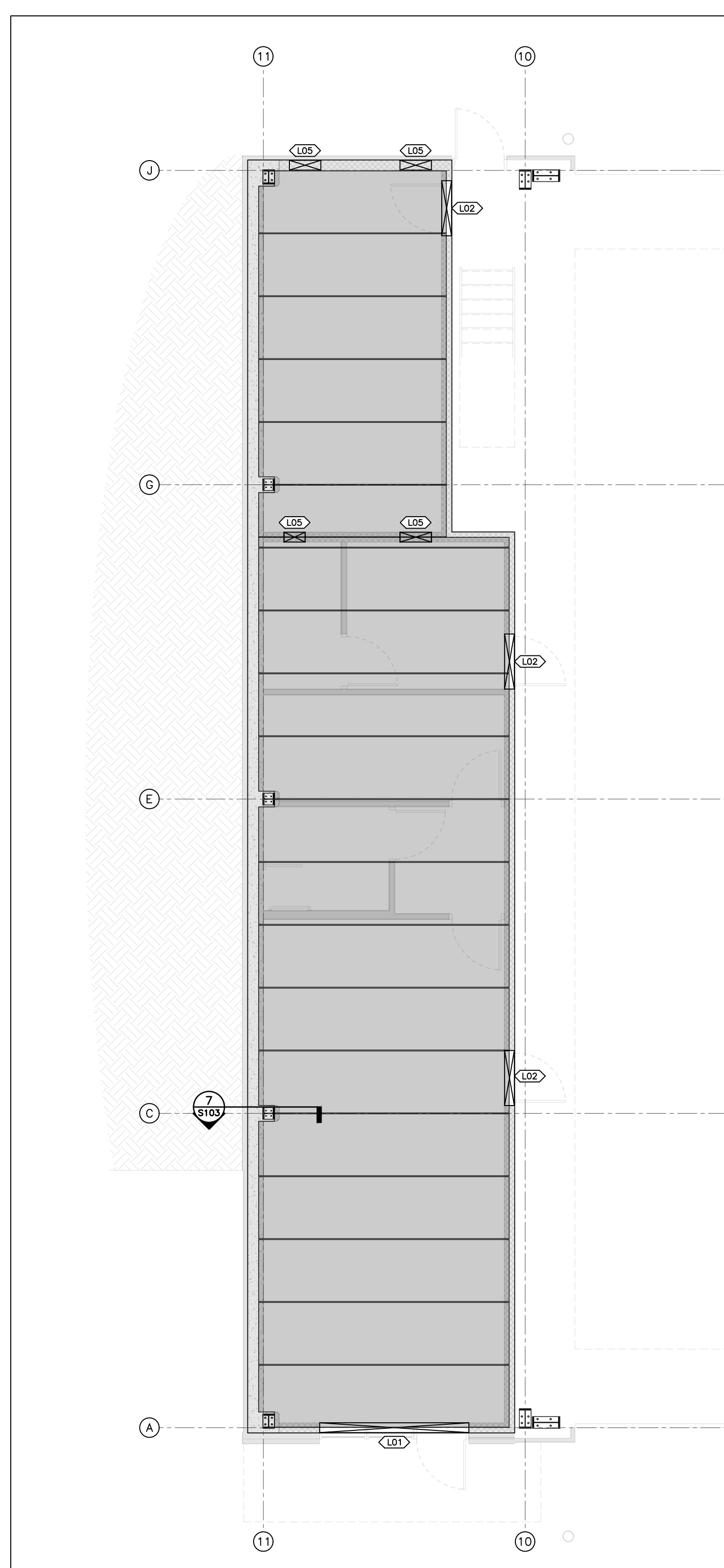
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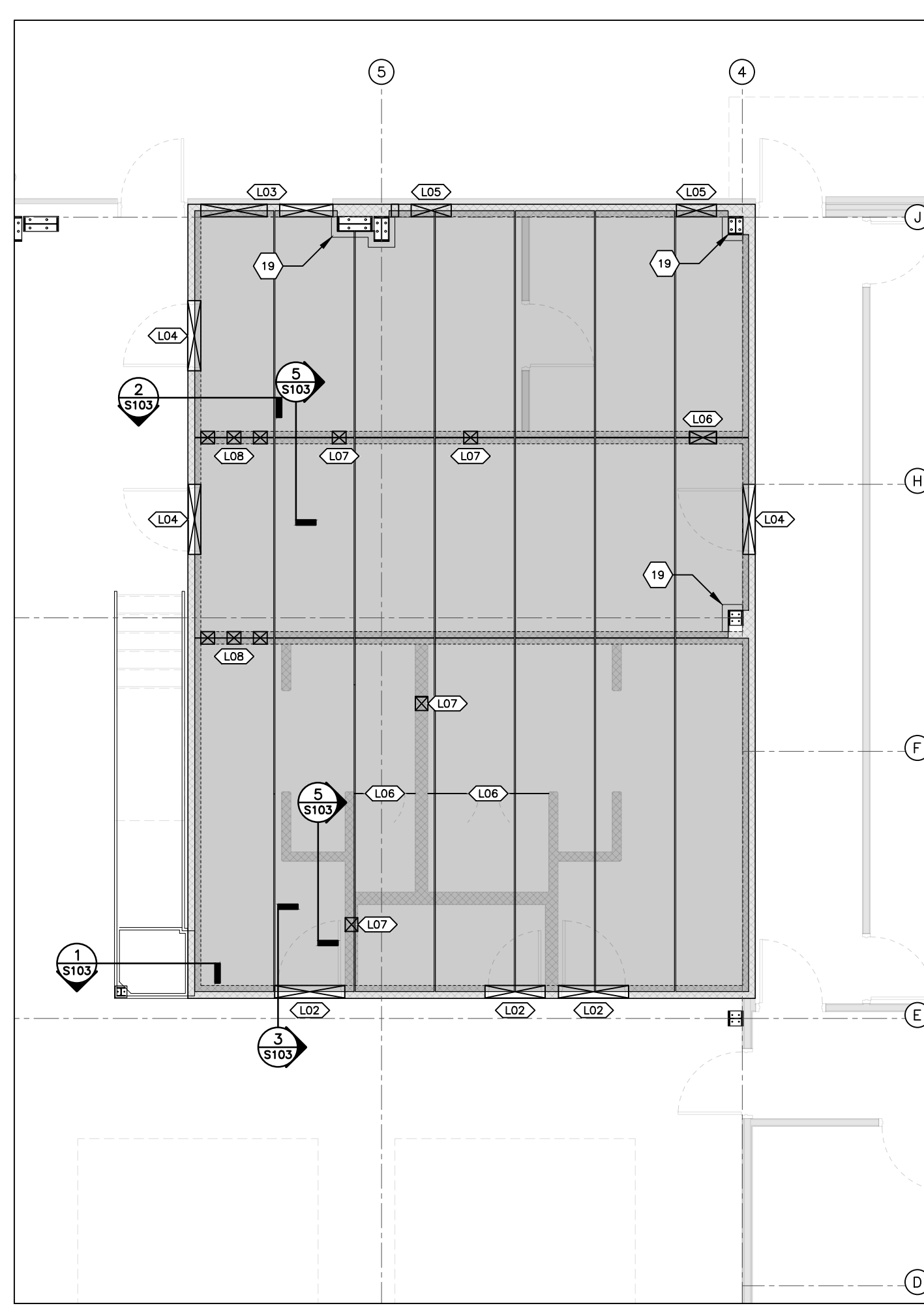
DESIGNED BY: HSH
DRAWN BY: HSH
APPROVED BY: THP
DATE: MAR-22

PROJECT: 164.21.005
PLOT DATE: MAY19-22

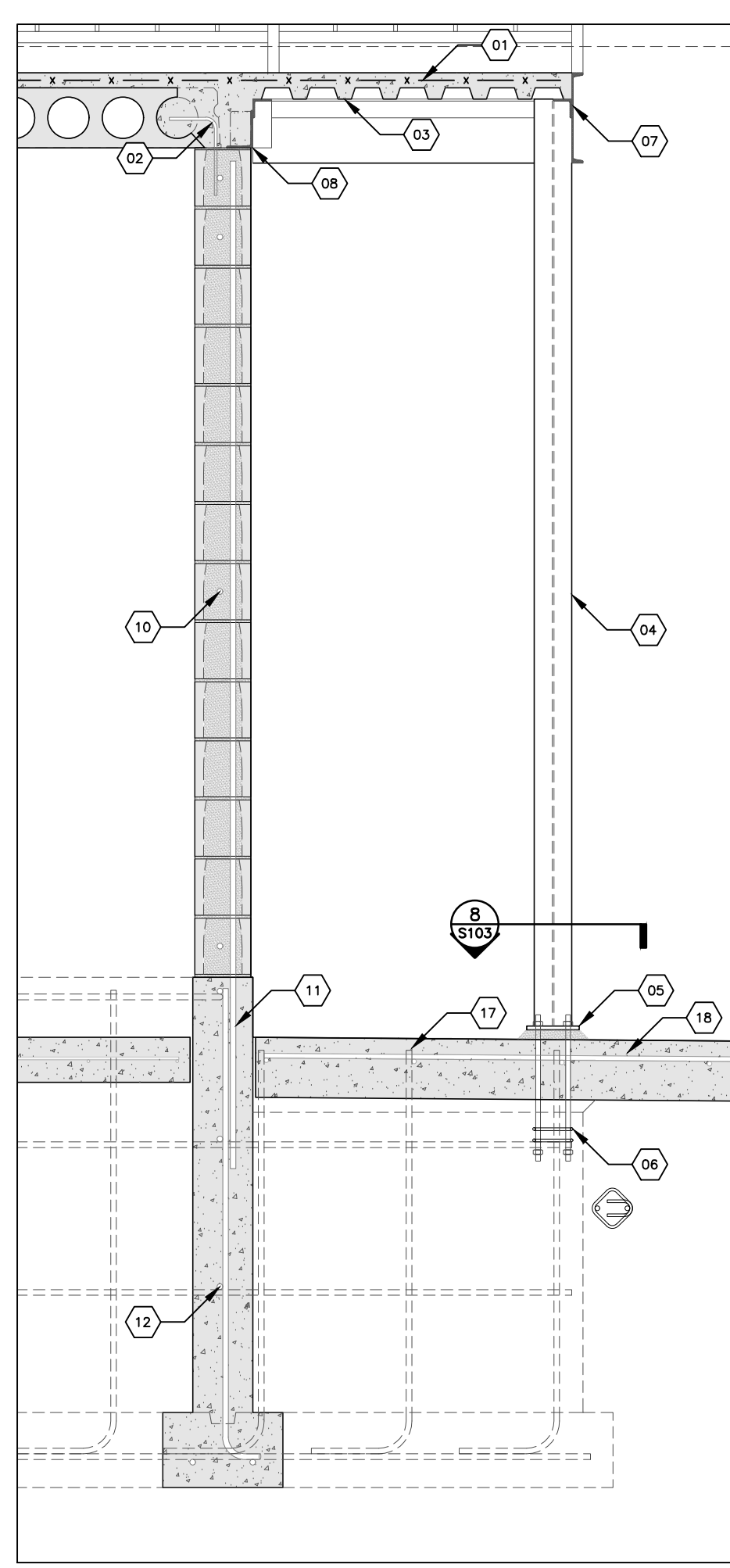
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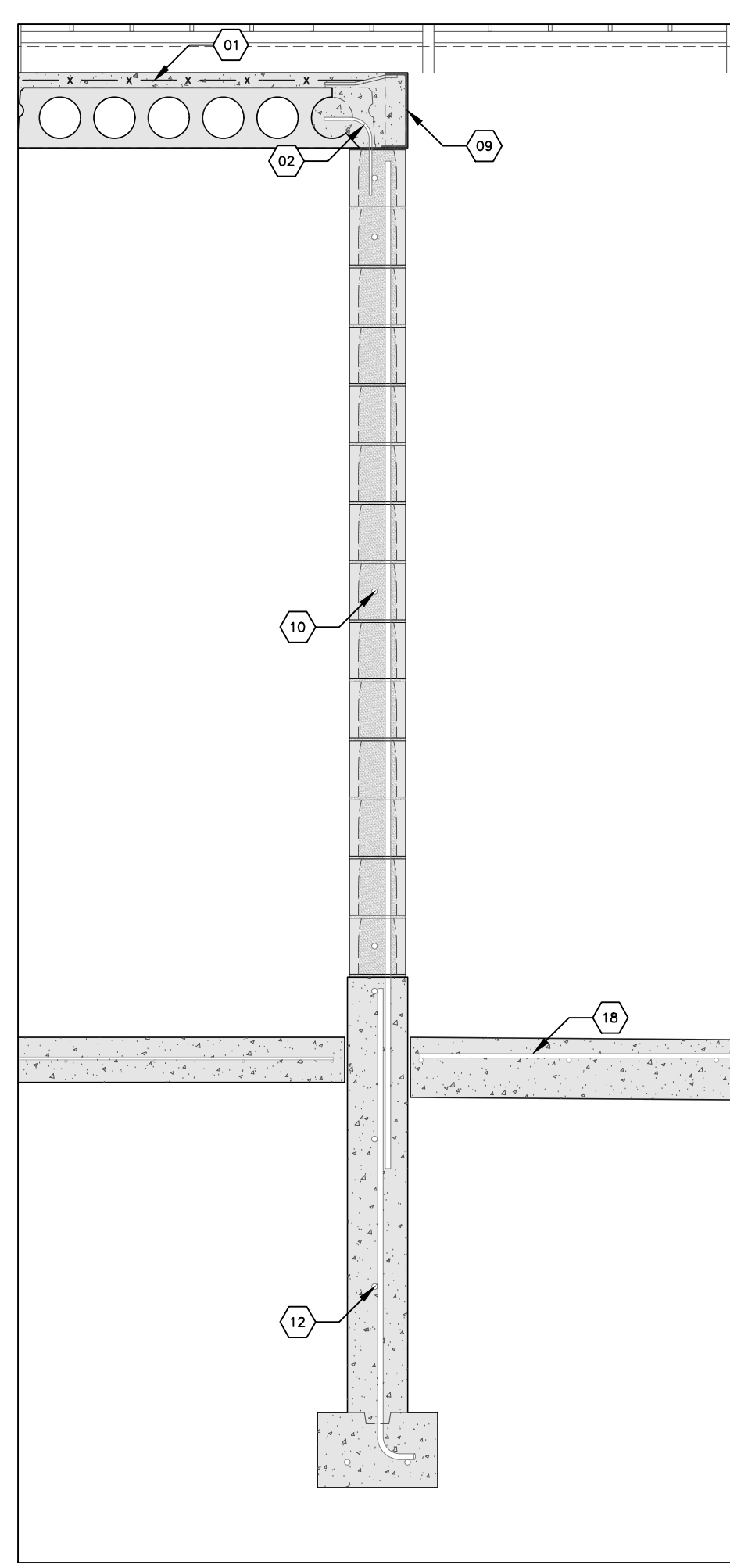
FLOOR FRAMING PLAN
1:75



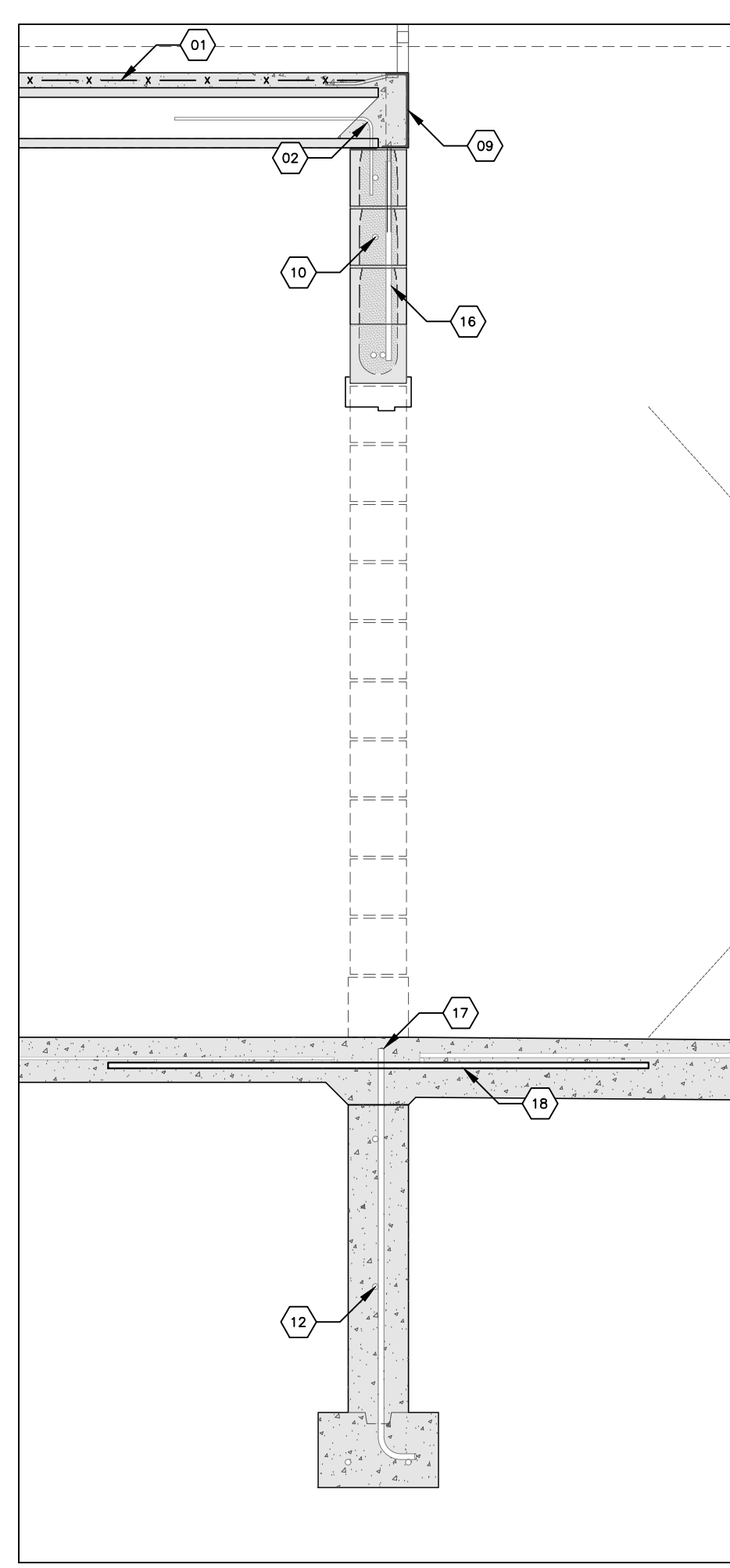
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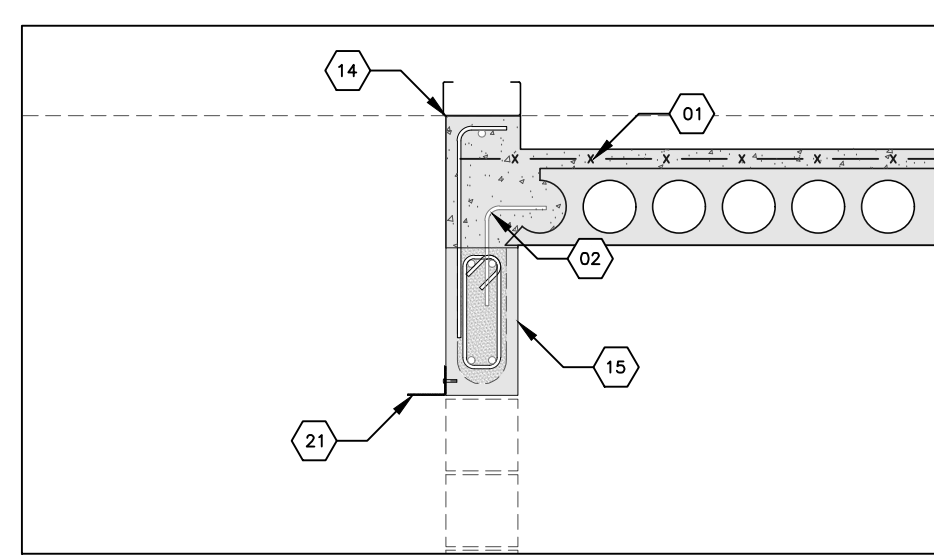
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S103 1:20



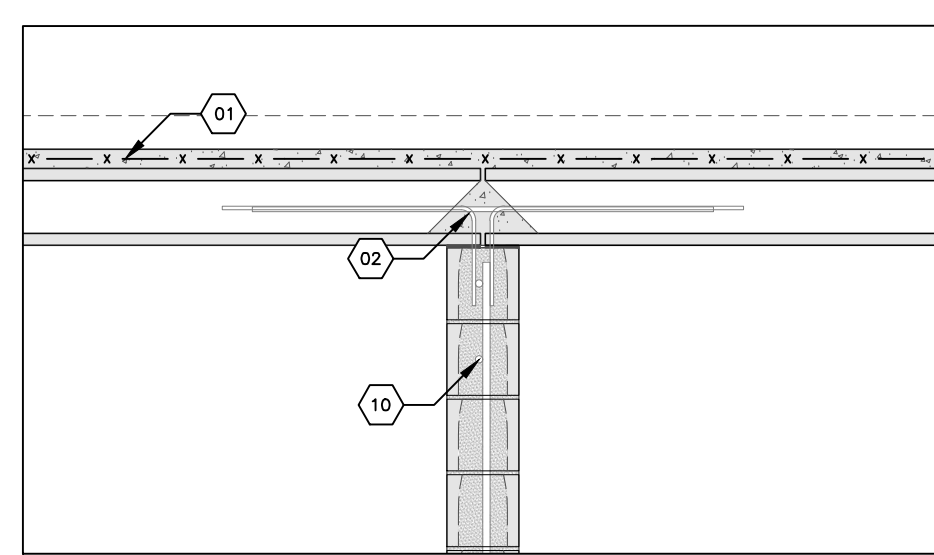
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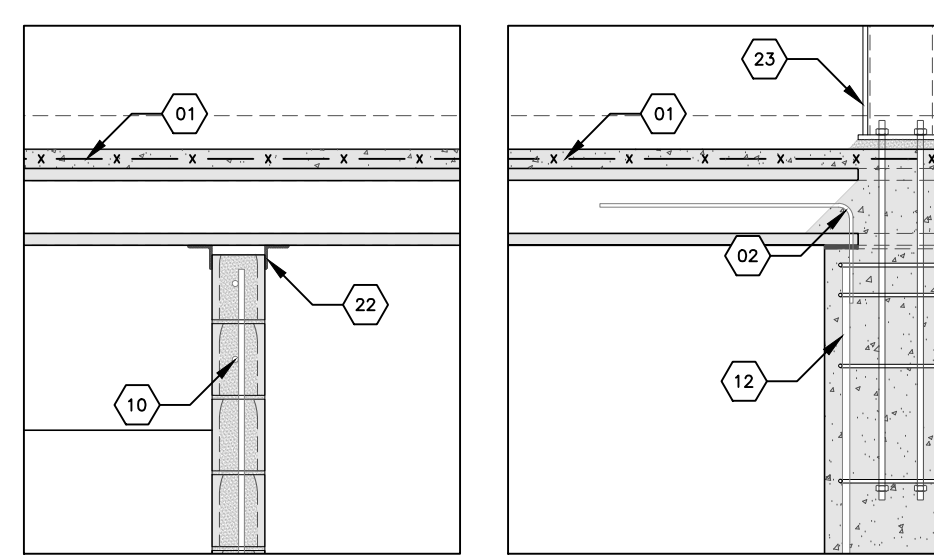
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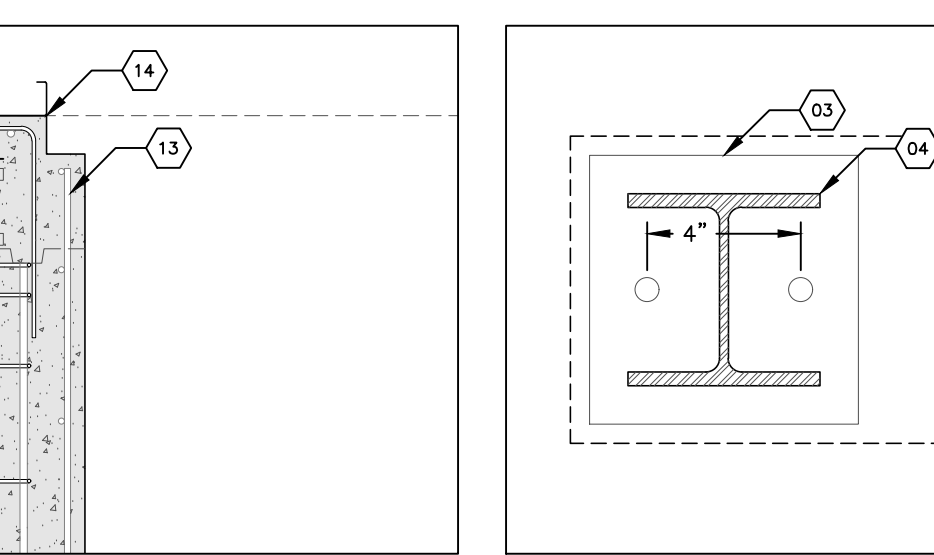
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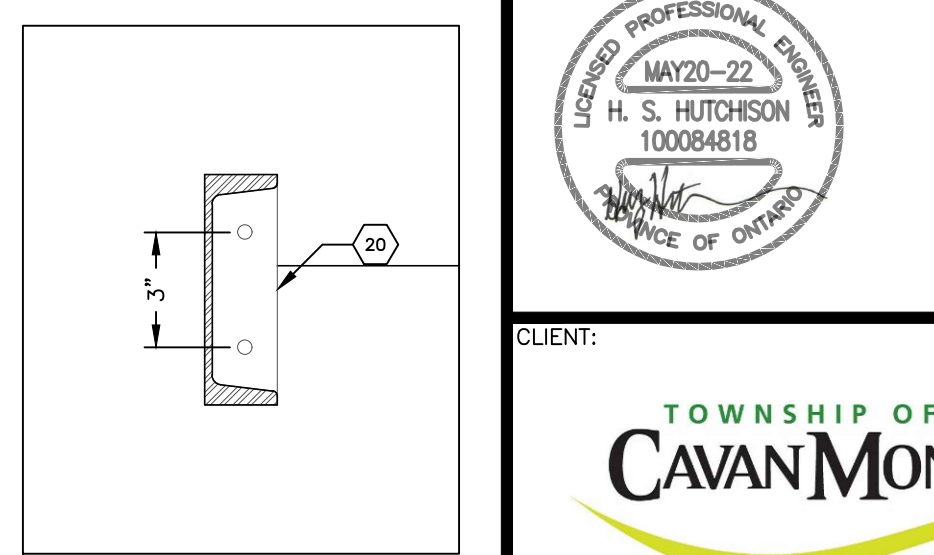
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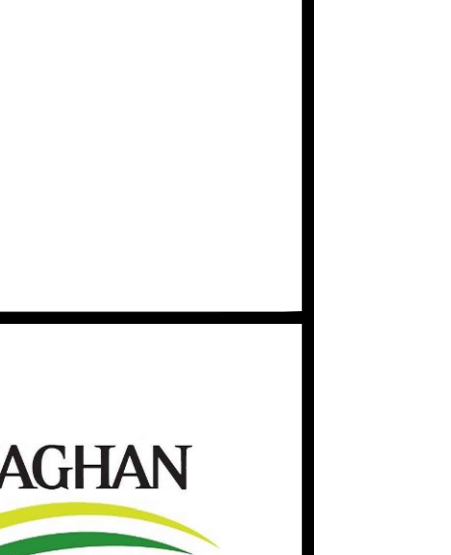
6 SECTION
S103 1:20



7 SECTION
S103 1:20



8 PLATE
S103 1:5



9 PLATE
S103 1:5

KEY NOTES SHEET S103

- 01 2" (50mm) TOPPING SLAB C/W 152X152 - MW18.7/MW18.7 WWR REINFORCING. CONCRETE FLO1 PER SCHEDULE S-01.
- 02 CMU WALL TO HCS CONNECTION REBAR @ BEARING PADS BY REBAR SUPPLIERS. ENSURE LATERAL LOAD TRANSFER TO PARALLEL WALLS ONLY, INCLUDING UNDER OBC SEISMIC DESIGN REQUIREMENTS. NOTE: DEAD LOAD AND SEISMIC PARAMETERS FOR MASONRY INCLUDED ON SHEET S100 SHALL BE USED. ACCIDENTAL TORSIONAL MOMENTS SHALL BE INCLUDED IN THE DESIGN OF THE FLOOR DIAPHRAGM AND REBAR CONNECTIONS. ANY RELIANCE ON THE TOPPING SLAB FOR DIAPHRAGM ACTION SHALL BE CLEARLY INCLUDED WITH THE SHOP DRAWING SUBMISSIONS.
- 03 1/2" STEEL DECK FOR LANDING BY STAIR SUPPLIER.
- 04 W130X24 COLUMN FOR LANDING SUPPORT.
- 05 7"x7"x1/2" C/W HOLES FOR 2-1/2" ANCHORS. SET U/S @ FFE + 1". SHIM AND GROUT.
- 06 PROVIDE 2-10M STIRRUPS.
- 07 STEEL FOR LANDING BY STAIR SUPPLIER.
- 08 L127X89X6.4 ANCHORED TO TOP COURSE CMU. WELD CLIP ANGLE TO PROVIDE DECK SUPPORT AS REQUIRED BY STAIR SUPPLIER.
- 09 L127X89X6.4 ANCHORED TO TOP COURSE CMU. L127X76X6.4, CONT. WELD AT JOINT. PROVIDE 1/2" STIFFENER PLATES AT GUARDRAIL POST LOCATIONS. PROVIDE 10M @ 500 O.C. WELDED TO L127X127X6.4 AND EXTENDING 8" MINIMUM INTO ADJACENT TOPPING SLAB.
- 10 CMU REBAR PER SCHEDULE S-06.
- 11 ENSURE FULL TENSION LAP TO FOUNDATION REBAR.
- 12 WALL AND PIER REBAR PER SCHEDULE S-03.
- 13 EXTEND OUTER LAYER REBAR TO 200 MINIMUM ABOVE U/S HCS SLAB. PROVIDE ADDITIONAL HORIZONTAL REBAR PER SCHEDULE S-03.
- 14 CURB TO EXTEND TO FFE + 11'-0" AND 8" OFFSET FROM GL. PROVIDE 1 20M CONT. AT T/O CURB AND 10M @ 500 REBAR C/W 90° STANDARD HOOK AND EXTENDING LAPPED 200 MIN WITH ADJACENT CMU OR WALL REBAR.
- 15 USE HIGH LINTEL BLOCKS FOR LO3 LINTEL. OTHER CMU LINTELS MAY BE U-BLOCK, LOW-WEB OR KNOCK OUT TYPES AT THE DISCRETION OF THE MASON.
- 16 CONTINUE VERTICAL REBAR THROUGH LINTEL LOCATIONS EXCEPT LO3.
- 17 EXTEND VERTICAL REBAR THROUGH DOOR OPENING AND AT UNDER SLAB SUPPORT WALLS TO WITHIN 40mm OF FFE.
- 18 REBAR AT OPENINGS AND SLAB LOCATIONS PER SHEET S101.
- 19 INCLUDE HCS SUPPORT STRUCTURE WITH PRE-ENGINEERED BUILDING DESIGN.
- 20 PROVIDE 2"x6"x1/2" C/W HOLES FOR 2-1/2" MASONRY ANCHORS FOR LO9 PARTITION SUPPORTS.
- 21 PROVIDE HOT-DIP GALVANIZED L3"x3"x1/2" AROUND (ALL SIDES OF) WINDOW LOCATIONS. FASTENERS AS REQUIRED PER WALL ASSEMBLY.
- 22 PROVIDE 1" GAP BETWEEN TOP OF NON-LOADBEARING MASONRY AND U/S HCS. PROVIDE 4" LONG L64X64X4.8 CLIP ANGLES AT 800 O.C. MAX, NOT MORE THAN 400 FROM WALL ENDS.
- 23 STRUCTURE BY PRE-ENG BUILDING SUPPLIER. BASE PLATE ANCHORS TO BE CONFIRMED DURING SHOP DRAWING REVIEW PROCESS.

SCHEDULE S-04 - CMU LINTELS

I.D.	LOCATION	OPENING(S) (WXH) (m)	LENGTH	U/S LINTEL	LINTEL SIZE (WXH)	BOT REBAR	TOP BEBAR	STIRRUPS	GROUT	NOTES
L01	OPENING W3 + D3	1.81X1.81 + 1.07X2.91	3.26m	FFE+2.61m	190X390	2-20M	2-20M HOOK	10M@200	20MPa	
L02	OPENING HSC BEARING	1.07X2.21	1.45m	FFE+2.21m	190X390	2-20M	2-20M HOOK	10M@200	20MPa	
L03	OPENING W5 + PLENUM	0.81X1.21 + 1.01X0.41	2.39m	FFE+2.61m	190X390	2-20M	-	-	20MPa	
L04	OPENING HCS SIDE	1.07X2.21	1.45m	FFE+2.21m	190X190	2-20M	-	-	20MPa	
L05	MECHANICAL OPENING	0.61X0.61 (& 0.61X0.41)	0.99m	FFE+2.81m	190X190	2-20M	-	-	20MPa	
L06	MECHANICAL OPENING	0.41X0.41	0.79m	FFE+2.81m	190X190	2-20M	-	-	20MPa	
L07	MECHANICAL OPENING	0.21X0.21	0.59m	FFE+2.81m	190X190	2-20M	-	-	20MPa	
L08	MECHANICAL OPENING	3-0.21X0.21	1.39m	FFE+2.81m	190X190	2-20M	-	-	20MPa	

NOTE: * OPENING BASED ON DOOR + 2" FRAME BUTT APPLICATION. REDUCE OPENING WHERE INDICATED FOR FRAME WRAP APPLICATION.

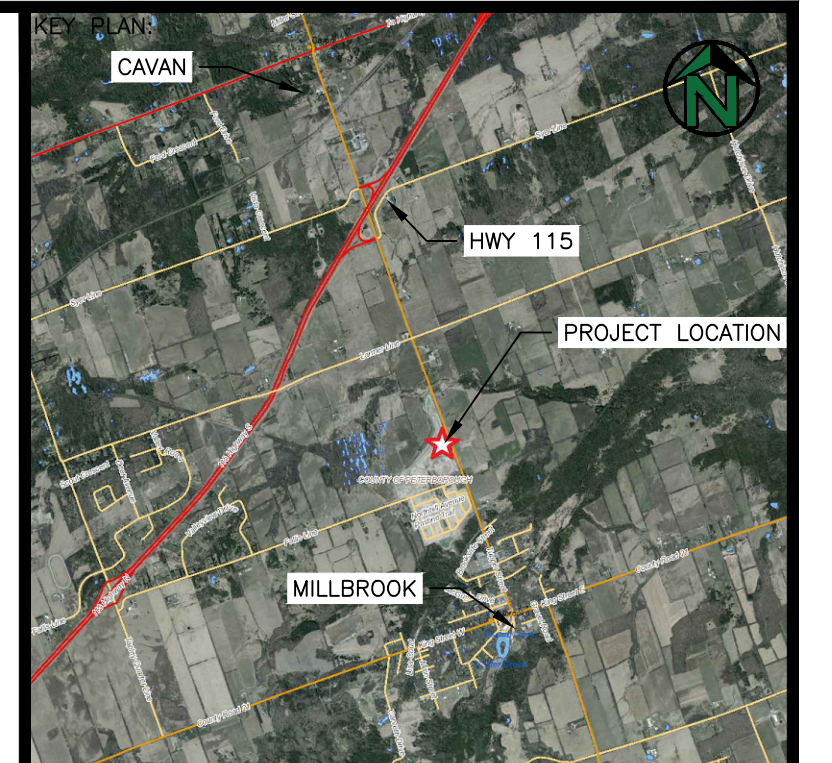
SCHEDULE S-05 - STEEL SUPPORTS & LOOSE STEEL ANGLE LINTELS

I.D.	LOCATION	SPAN	SECTION	BEARING	FINISH	NOTES
L09	WASHROOM PARTITIONS	AS INDICATED	C150X12	AS INDICATED	SHOP PRIMER	PROVIDE 2-1/2" GALVANIZED WEDGE ANCHORS BOTH ENDS.
L10	W1, W2, W4, D1	UP TO 1.8m	L89X89X6.4	150	HOT-DIP GALV.	PAINT TO MATCH WINDOW/DOOR FINISH WHERE VISIBLE.
L11	PCCP D3 W3	UP TO 3.0m	L127X89X7.9	150	HOT-DIP GALV.	PAINT TO MATCH WINDOW/DOOR FINISH WHERE VISIBLE.

SCHEDULE S-06 - CMU REINFORCING

TYPE	HORIZONTAL REBAR	VERTICAL REBAR	NOTES
190mm CMU	1-20M@ 1ST, 7TH, 14TH & 15TH COURSE	1-20M@800 + CORNERS + BOTH ENDS LINTEL	
140mm CMU	1-15M@ 1ST, 7TH, 14TH & 15TH COURSE	1-15M@800 + CORNERS + BOTH ENDS LINTEL	

NOTE: FULLY GROUT REBAR CELLS.



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NO.	DATE	BY	REMARKS
0	MAY20-22	THP	ISSUED FOR TENDER



PROJECT:
**NEW FIRE STATION No. 1
HIGHLANDS BOULEVARD
MILLBROOK, ON**

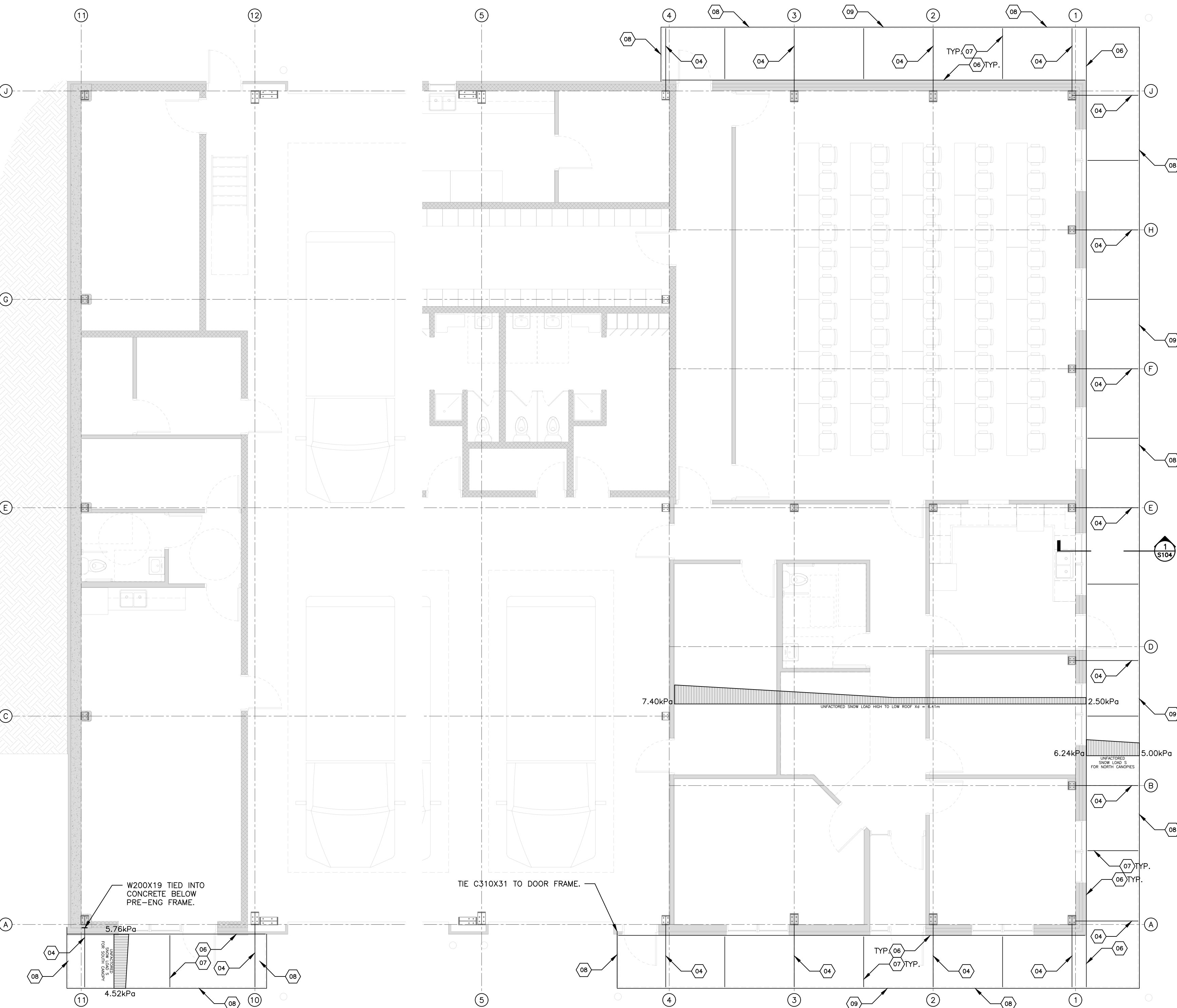
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AND DETAILS**



DESIGNED BY: HSB	DRAWN BY: HSB	APPROVED BY: THP	DATE: MAR-22
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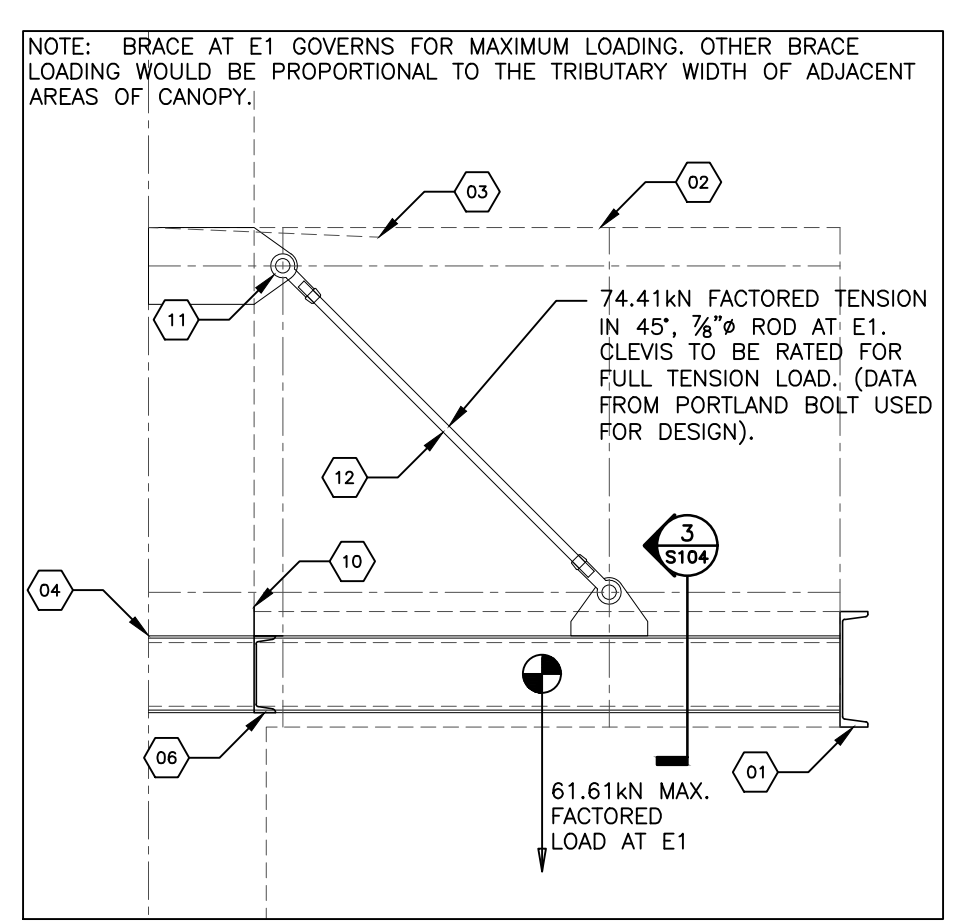
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164.21.005
PLOT DATE:
MAY19-22

S103

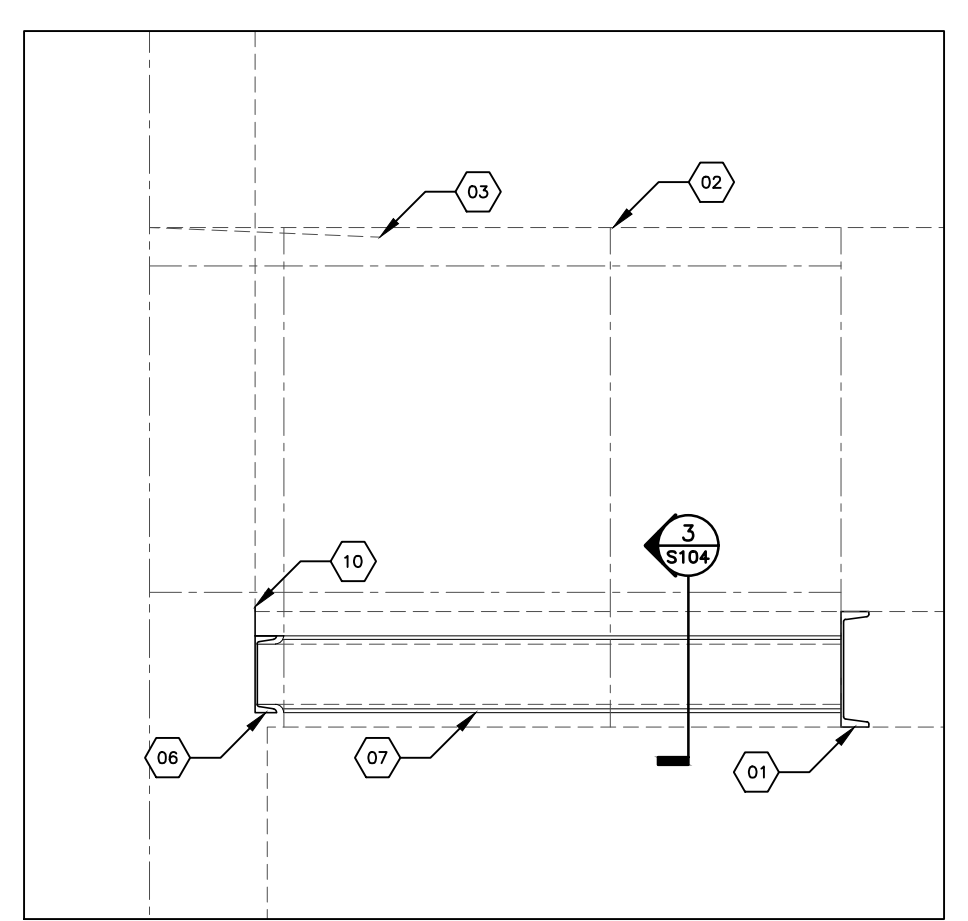


ROOF PLAN
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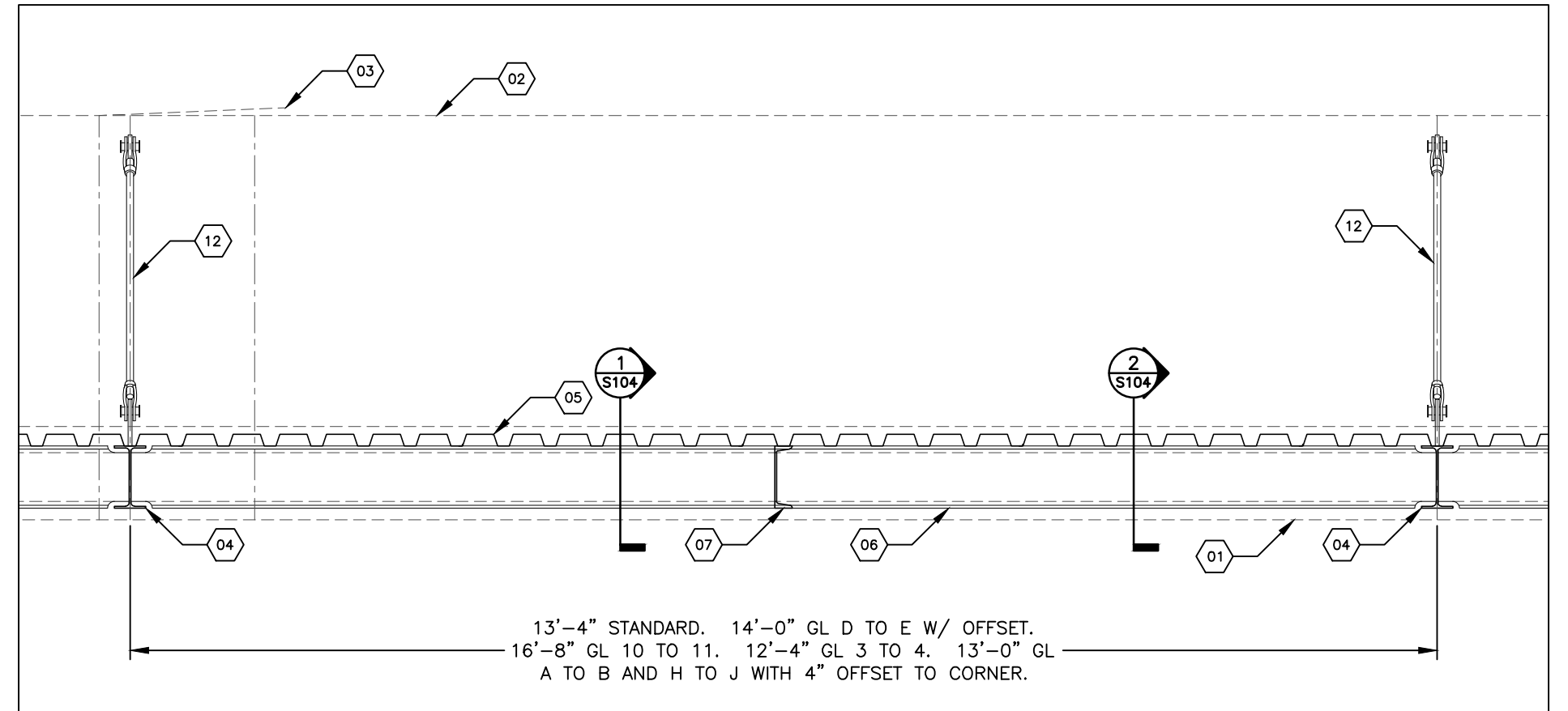
ROOF PLAN
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SECTION 1
S104 1:20



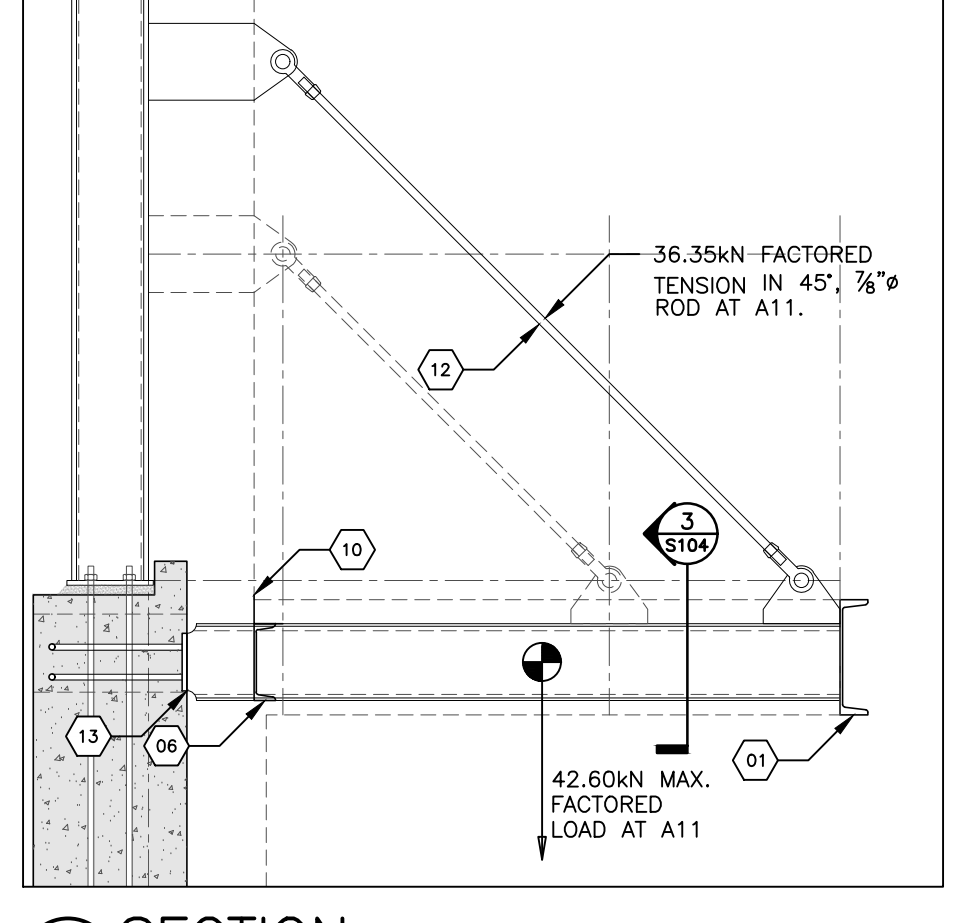
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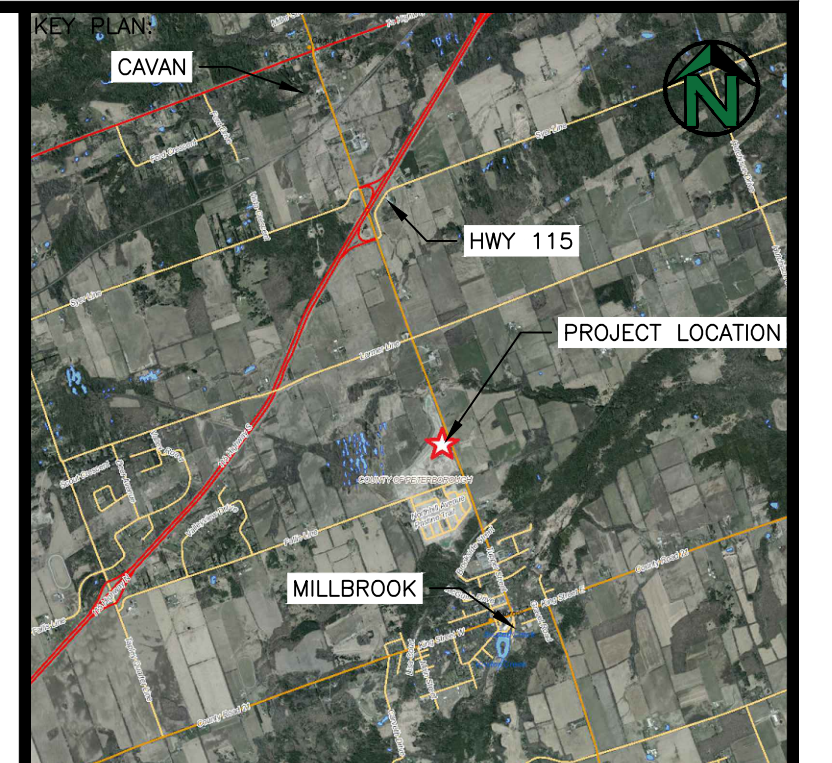
SECTION 3
S104 1:20

KEY NOTES SHEET S104

- 01 U/S STEEL CANOPY AT EL FFE+9'-8". REFER TO OTHER DRAWINGS FOR ADDITIONAL INFORMATION.
- 02 U/S ROOF PURLINS PER SHEET S100 AND PRE-ENG BUILDING SUPPLIER (FFE+14'-0" MIN.) TO BE CONFIRMED/COORDINATED.
- 03 EXTENSION OF ROOF SLOPE BEYOND GL A AND J.
- 04 W200X19. U/S STEEL AT EL FFE+9'-9 1/2". COORDINATE CONNECTION TO PRE-ENG STEEL.
- 05 1 1/2" STEEL DECK. 18 GAUGE MIN. THICKNESS. MID SPAN DEFLECTION MAY BE LIMITED L/180. 60" NOMINAL LENGTH (SPAN).
- 06 C200X17 TYP. SIMPLY SUPPORTED EXCEPT AT OVERHANGS AT A4, J4, A10, AND A11 WHERE MOMENT CONNECTIONS REQUIRED.
- 07 C200X17 MID SPAN BRACE. BOLTED CONNECTIONS TO C200X17 AND C310X31.
- 08 C310X31 CONT. FULL PERIMETER OF CANOPY. PROVIDE WELDED CLIP ANGLES AND BOLTED CONNECTIONS TO END OF W200X19. PROVIDED WELDED CLIP ANGLE FOR BOLTED CONNECTION TO C200X17 BRACE. PROVIDE WELDED CLIP ANGLE SUPPORT FOR OUTER EDGE OF STEEL DECK. ENSURE SUPPORT FROM AT LEAST 2 W200X19 W/O INTERMEDIATE CONSTRUCTION JOINTS. ALL CONNECTIONS SHALL NOT BE VISIBLE FROM OUTER FACE OF CHANNEL.
- 09 CONSTRUCTION JOINTS FOR C310X31 MAY BE MADE AT INFLECTION POINTS: BETWEEN GL 2 AND GL 3 AT THE INFLECTION POINT CLOSEST TO GL 2 (4'-6"± NORTH OF GL 2); BETWEEN GL B AND D (5'-4"± EAST OF D); AND BETWEEN GL F AND H (4'-6"± WEST OF GL F).
- 10 CONT. GALVANIZED, COLD-FORM, 18 GAUGE, L3"X3" WELDED BETWEEN TOP OF CHANNEL AND U/S STEEL DECK. ANGLE TO PROVIDE TIE-IN FOR ROOFING SYSTEM AT FACE OF WALL ABOVE. REFER TO BUILDING DRAWINGS FOR ADDITION DETAIL.
- 11 1/2" TICK PLATE FOR CLEVIS CONNECTION (1 1/2"± PIN TBC). AS CONFIGURED PLATE TO FRAME CONNECTION TO BE PROVIDED FOR FACTORED LOADS OF 52.61kN V, 52.61kN H AND A MAX. MOMENT OF 18.71kN-m AT GL.
- 12 3/4" GALVANIZED STEEL ROD (THREADED ENDS) CONNECTION WITH CLEVIS ENDS. CONFIGURED PORTLAND BOLD CLEVIS NO. 25 C/W 1 1/2" PINS. ALL SUBMISSIONS SHALL BE CONFIRMED FOR APPROPRIATE LOADS.
- 13 W200X19. U/S STEEL AT EL FFE+9'-9 1/2". PROVIDE CAST-IN-PLACE 6"X6"X5" R FOR CONNECTION AT A11. C OF R TO BE ALIGNED WITH C OF PRE-ENGINEERED FRAME (ABOVE). PROVIDE 2-15M REBAR BENT AT 180° AND WELDED TO PLATE AT 2 LOCATIONS EACH. CONFIGURE REBAR TO EXTEND TO WITHIN 1 1/2" OF OPPOSITE SIDE OF PIER (14" INCLUDING OUTSIDE RADIUS). CONFIRM COORDINATE WITH REBAR AND PRE-ENG SHOP DRAWING SUBMISSIONS.



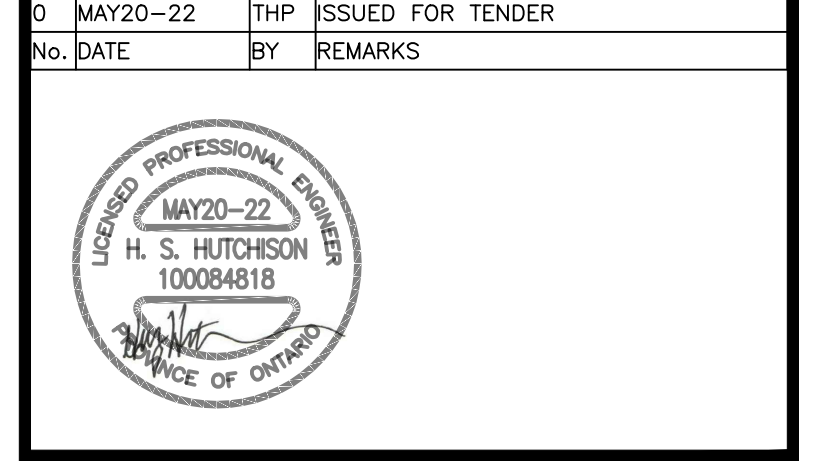
SECTION 4
S104 1:20



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No.	DATE	THP	ISSUED FOR TENDER
0	MAY20-22	THP	ISSUED FOR TENDER



PROJECT:
**NEW FIRE STATION No. 1
HIGHLANDS BOULEVARD
MILLBROOK, ON**

TITLE:
CANOPY



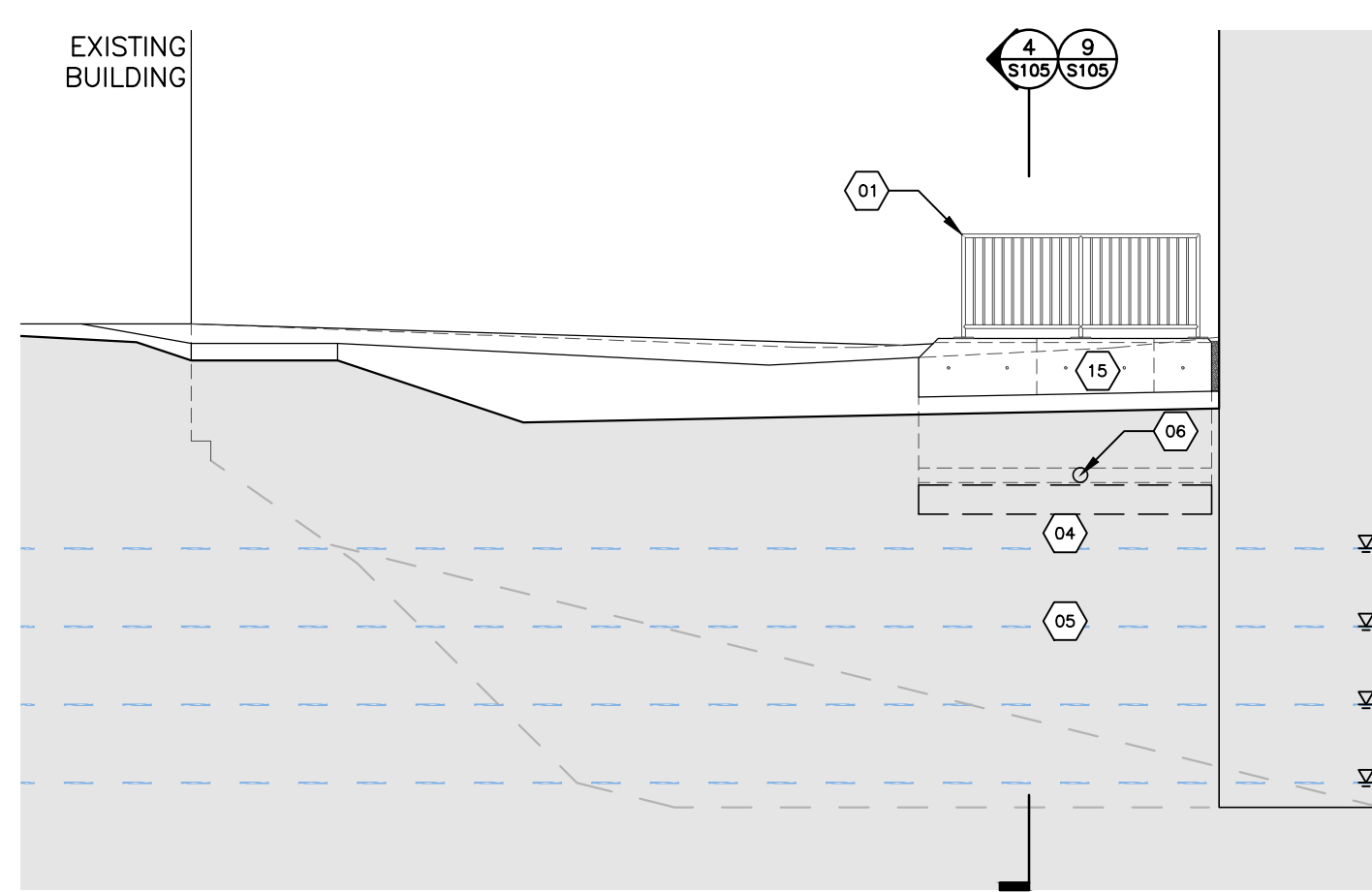
13 Commerce Court
Bancroft, Ontario
613.332.0097
greenview-environmental.ca

DESIGNED BY:	DRAWN BY:	APPROVED BY:	DATE:
HSB	HSB	THP	SEP-21

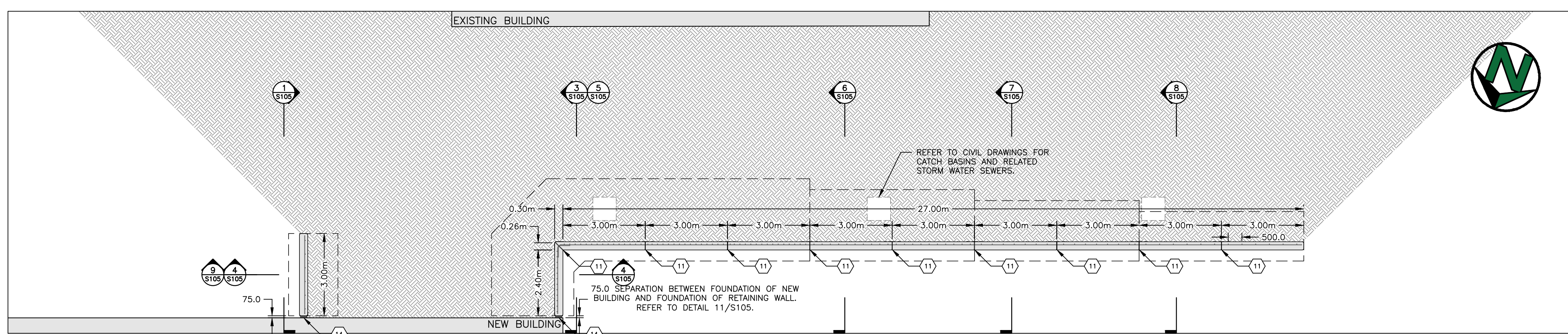
PROJECT:
164.21.005

PLOT DATE
MAY19-22

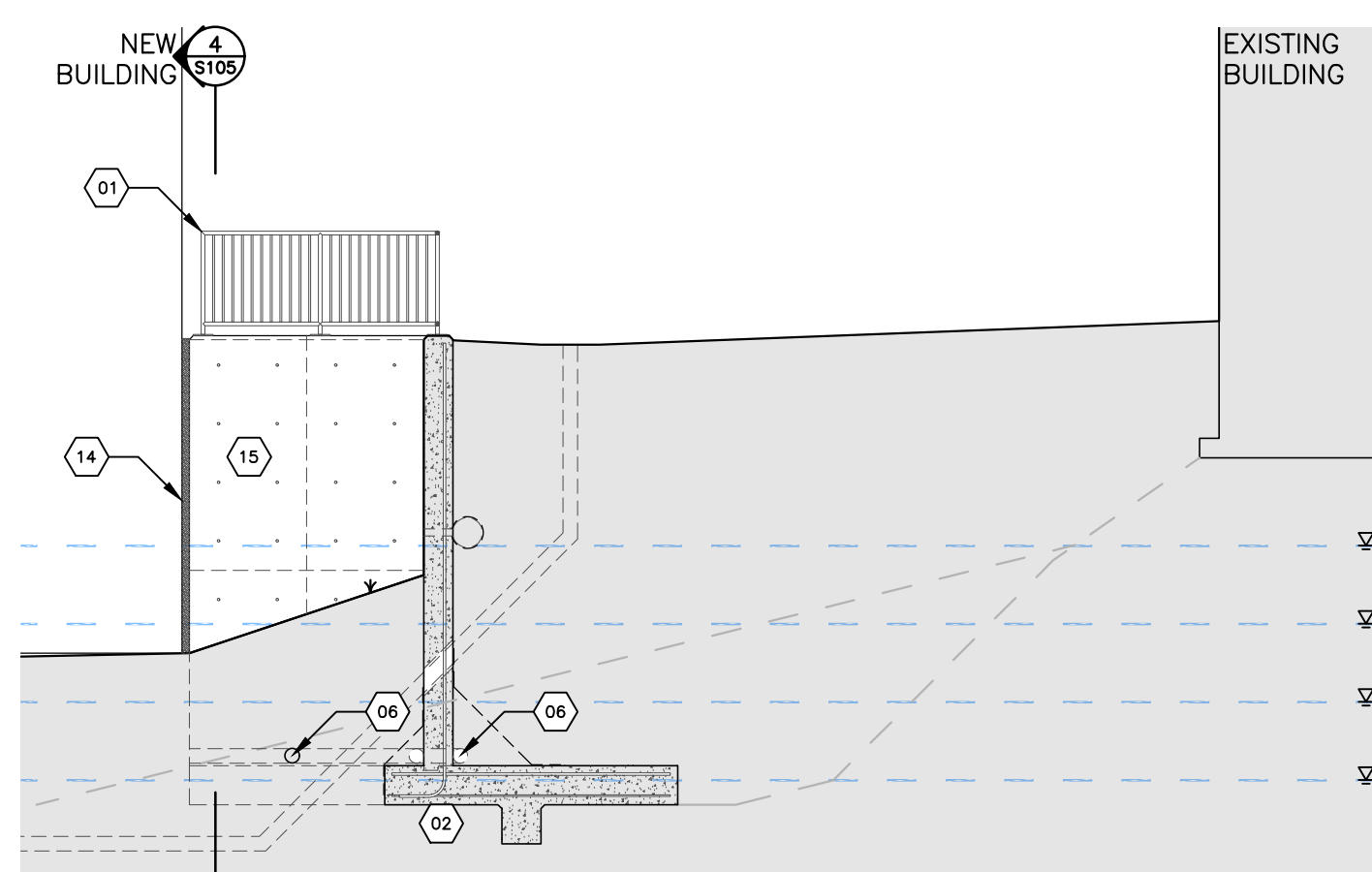
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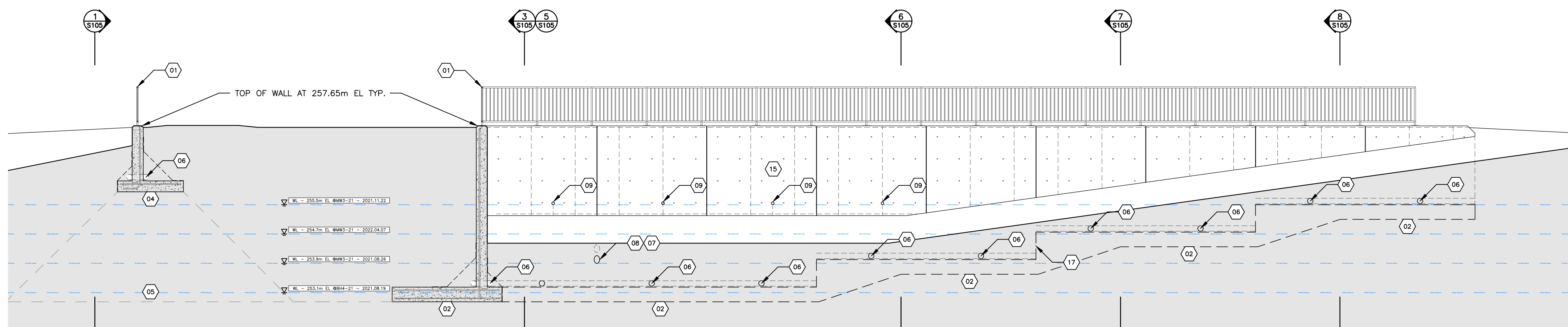
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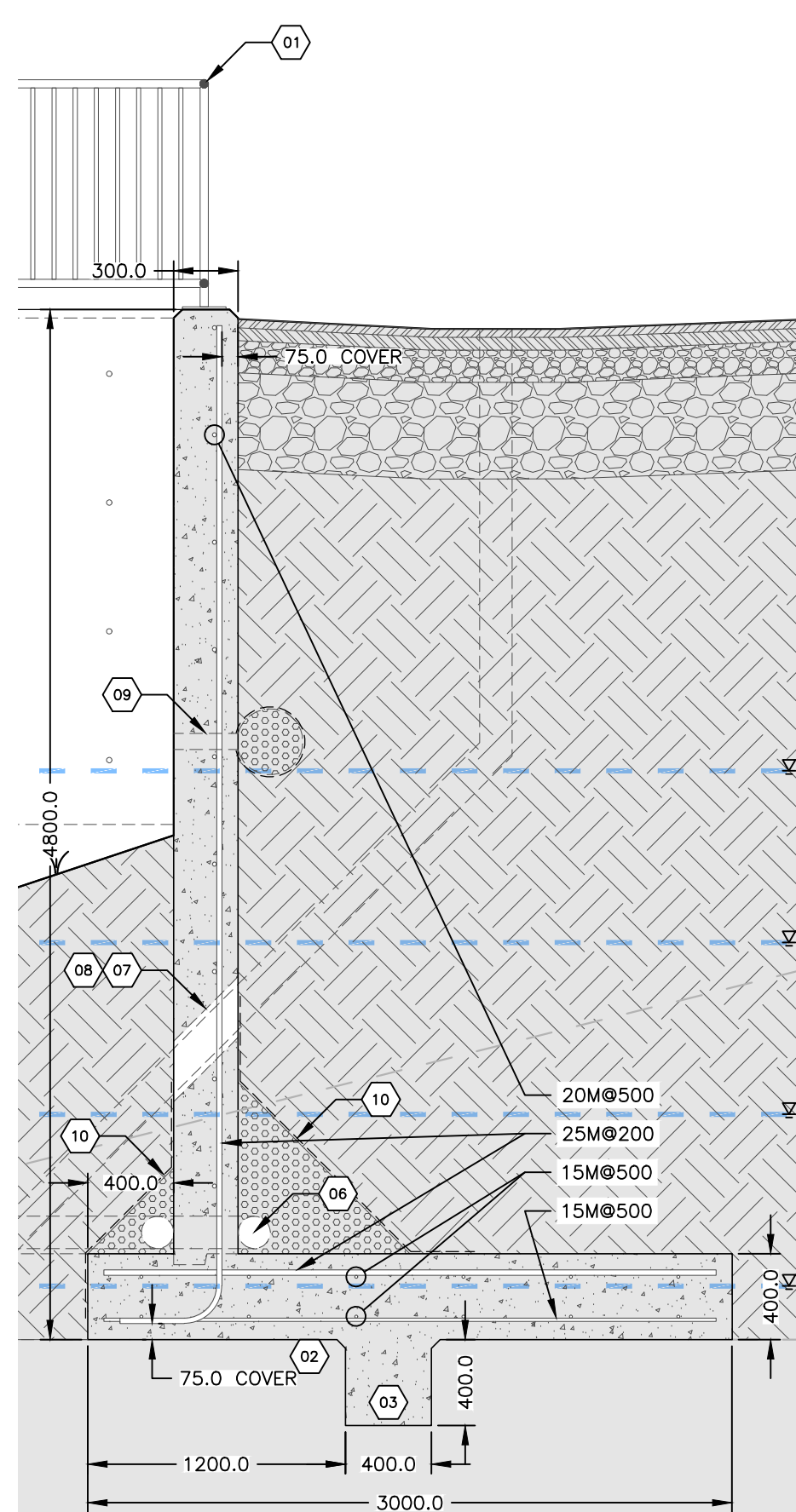
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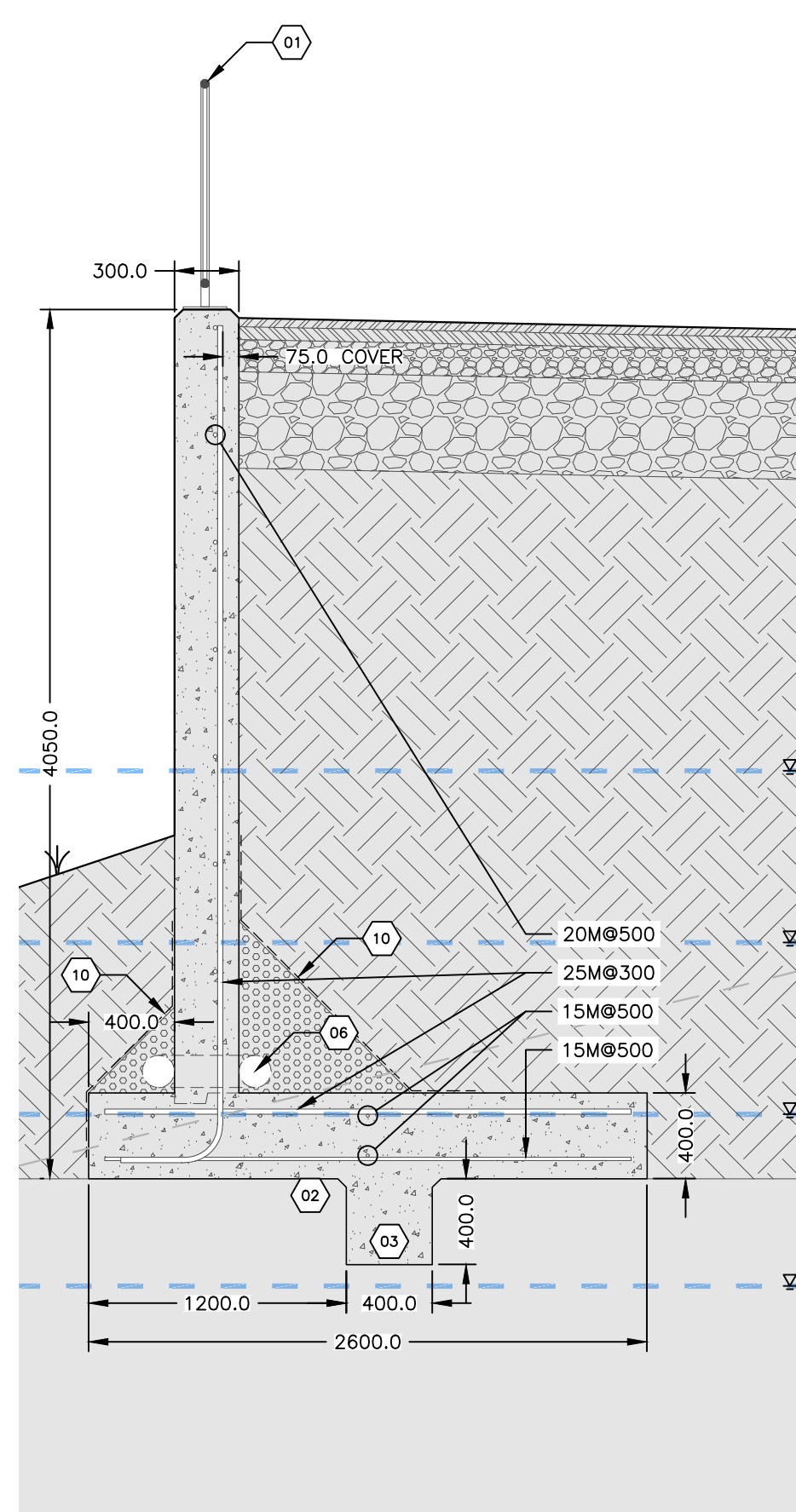
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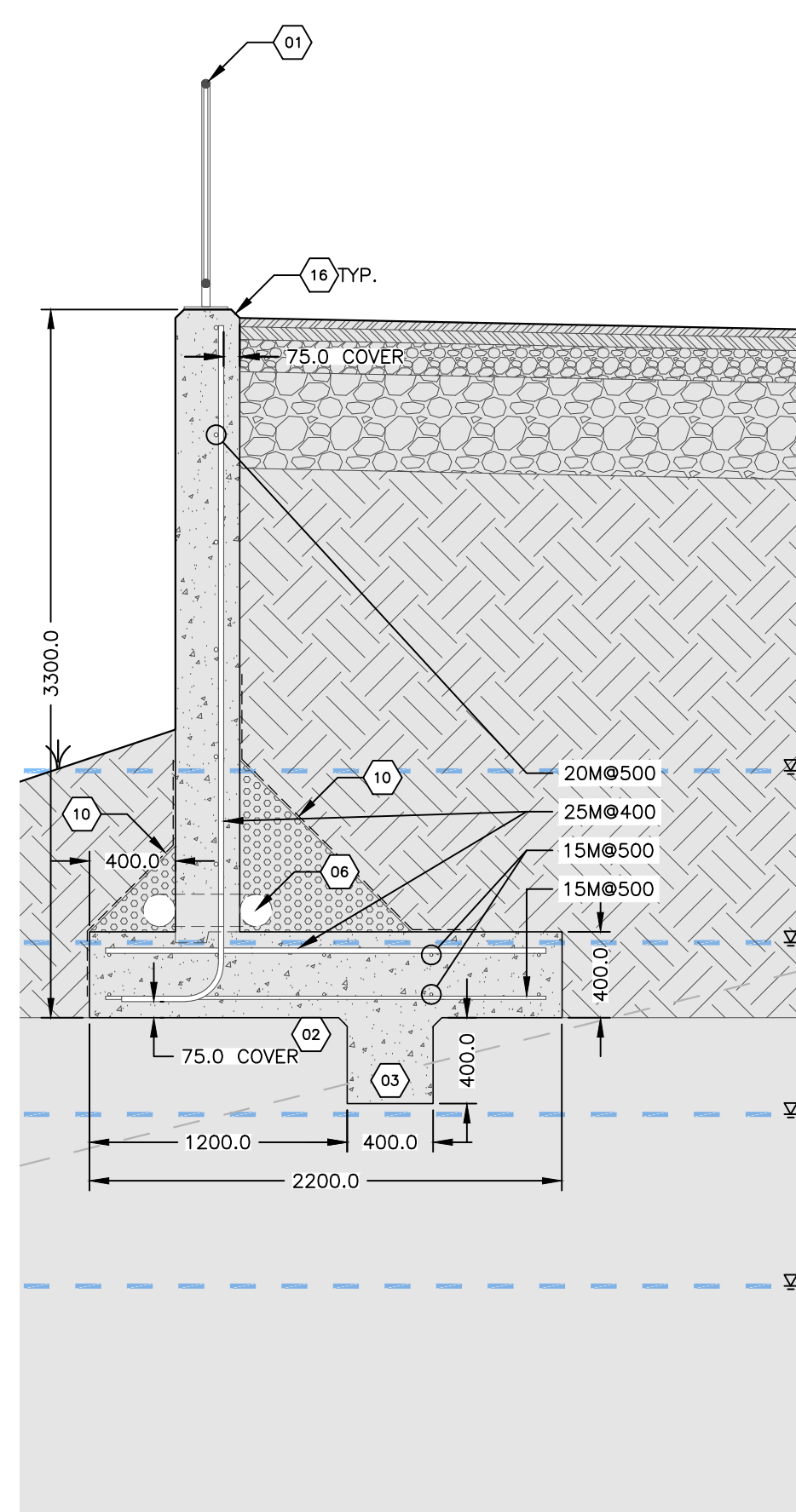
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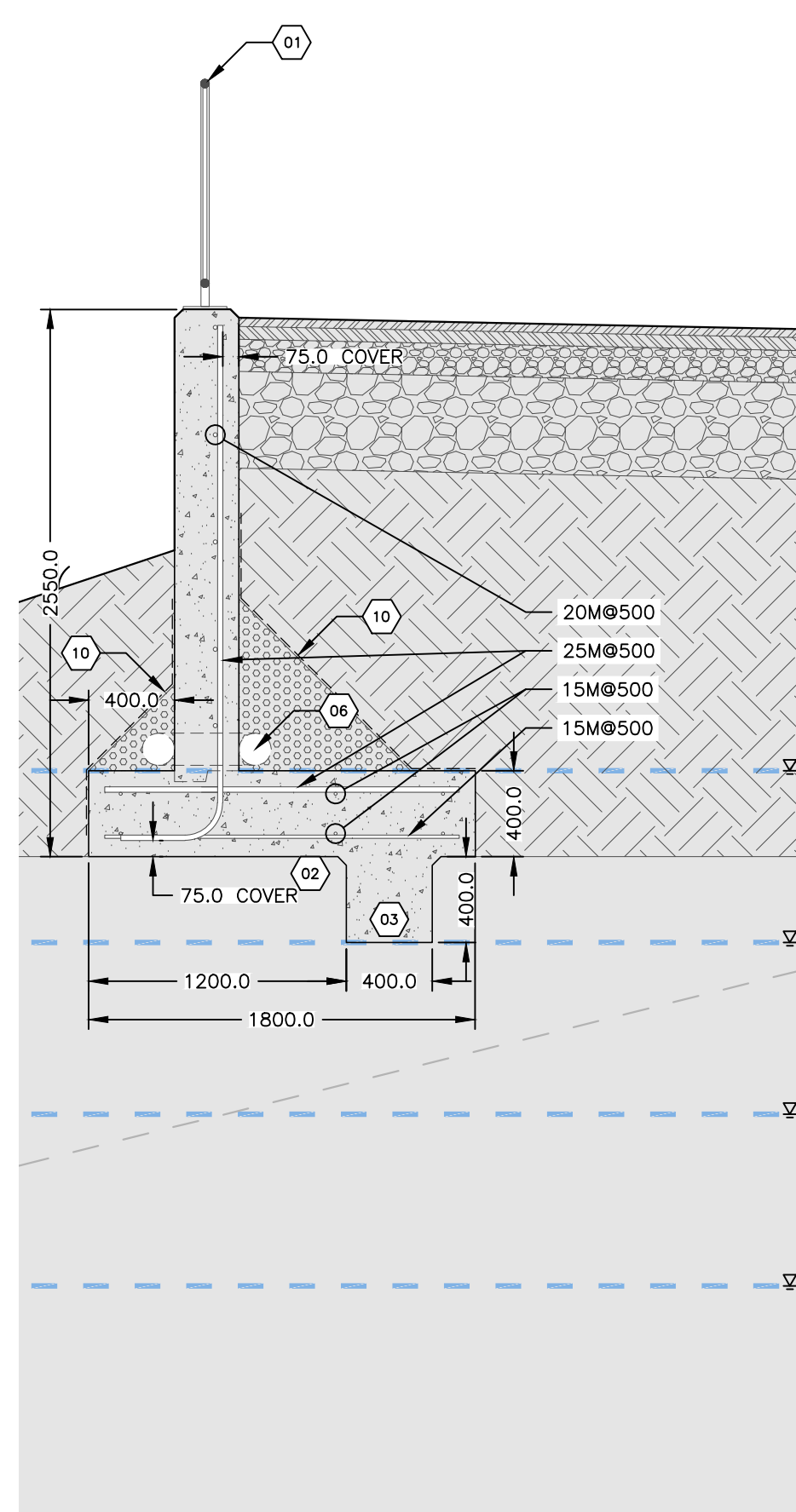
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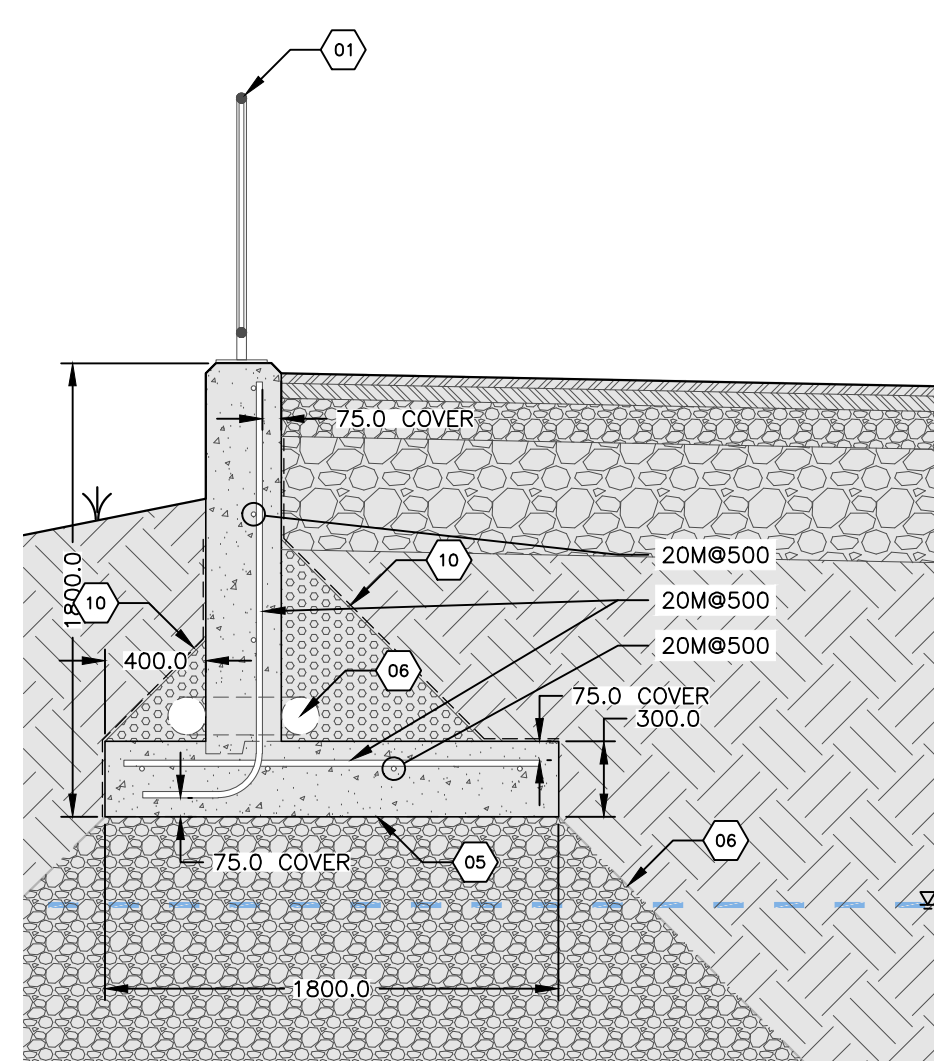
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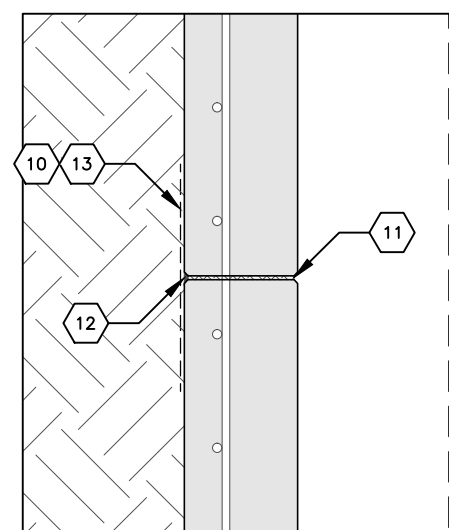
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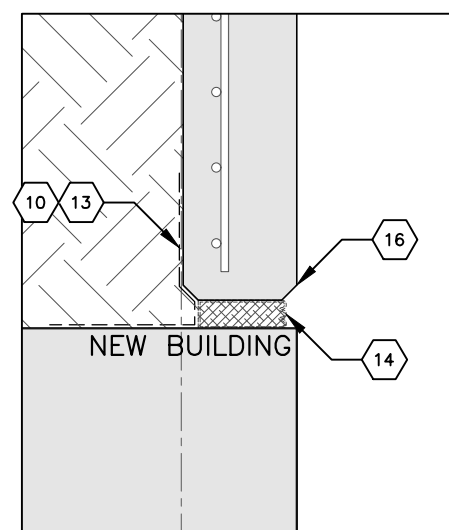
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9 SECTION
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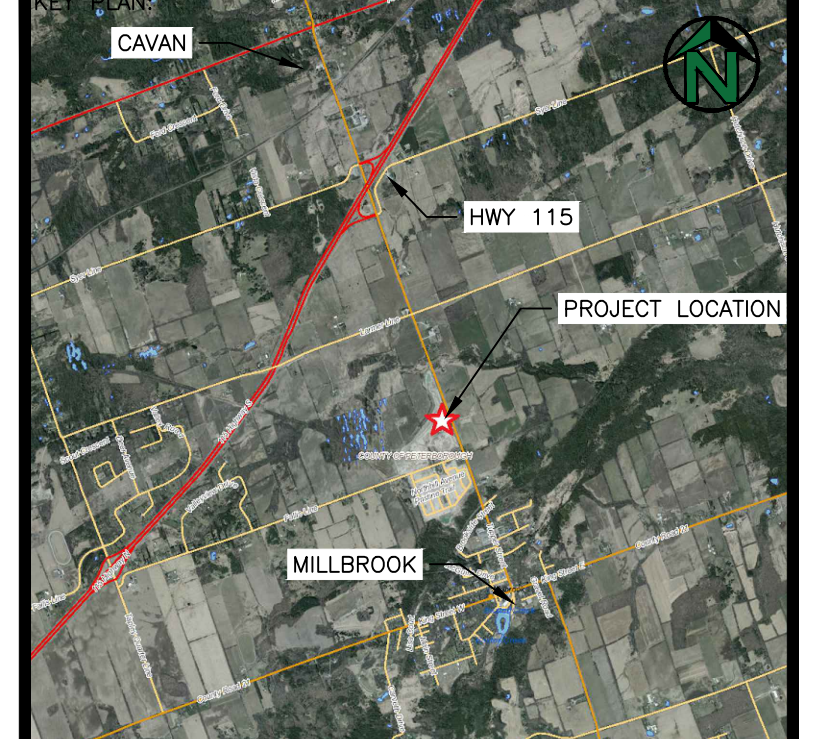
10 DETAIL
S105 1:20



11 DETAIL
S105 1:20

KEY NOTES SHEET S105

- 01 EXTERIOR GUARD RAILS: TOP RAIL (ASTM A36) DN40 (48.3 O.D.) AT 1070 ABOVE U/S BASE R. BOTTOM RAIL DN40 AT 140 ABOVE U/S OF BASE R. POST DN40 EQ SPACING NOT MORE THAN 1500 O.C. (1200 O.C. FOR WALL SECTIONS ADJACENT TO NEW BUILDING). PICKETS 16X16 SQUARE BAR, EQ SPACING BETWEEN BARS NOT MORE THAN 100. BASE R. 200X200X16 THICK C/W 4 12.7# STAINLESS STEEL ANCHORS (HILTI EPOXY ANCHORS OR EQUAL). ALL JOINTS WELDED AND MACHINED TO MATCH ADJACENT PIPE PROFILE. PROVIDE SLIP JOINTS IN TOP AND BOTTOM RAILS AT NOT MORE THAN 6M SPACING. FACTORY APPLIED EPOXY COATING SYSTEM WITH FIELD TOUCH UP.
- 02 FOUND WALLS ON UNDISTURBED NATIVE SOILS AS APPROVED ON-SITE BY THE GEOTECHNICAL ENGINEER. NOTE GROUNDWATER ELEVATIONS EXTRAPOLATED FROM NOTED BOREHOLE LOCATIONS. INSTALL SHORING AND/OR Dewatering MEASURES AS REQUIRED AND TO THE DIRECTION OF THE GEOTECHNICAL ENGINEER TO SAFELY OBTAIN THE REQUIRED DEPTH OF FOUNDATION. TRENCH SLIP KEYS AS AND WHERE INDICATED AND FORM MONOLITHIC WITH FOOTINGS.
- 03 SLIP KEY AS INDICATED IN KEY NOTE 02
- 04 FOUND WALLS ON ENGINEERED FILL TO PROVIDE 100% FACTORED ULS AS DIRECTED AND APPROVED ON-SITE BY THE GEOTECHNICAL ENGINEER. ALTERNATIVELY, FOUND WALL TO ELEVATION OF ADJACENT BUILDING FOUNDATIONS (252.85m EL) TO DIMENSIONS AND CONFIGURATION AS INDICATED IN SECTION 5/S105.
- 05 ENGINEERED FILL AS INDICATED IN KEY NOTE 04.
- 06 PROVIDE THROUGH WALL DRAINAGE AT BASE OF WALL, ABOVE LEVEL OF FOOTING. DRAINAGE TO BE COMPRISED OF 150# "BIG-1" PIPE WITH THROUGH WALL CONNECTIONS AT 3.0m INTERVALS. PROVIDE T CONNECTORS ON BOTH SIDES OF THROUGH WALL DRAINS AND CONNECT ADJACENT DRAINS WITH FILTER SOCK WRAPPED, PERFORATED PIPE TO FULL LENGTH OF WALL. SURROUND PIPE SECTIONS WITH 15# CLEAR STONE. COMPLETELY COVER STONE WITH NON-WOVEN GEOTEXTILE PRIOR TO INSTALLATION OF BACK FILL.
- 07 SLEEVE FOR CIVIL AND ELECTRICAL SERVICES AS INDICATED ON OTHER DRAWINGS AND AS REQUIRED. DO NOT RUN SERVICES UNDER WALLS WITHOUT OBTAINING WRITTEN DIRECTION FROM ENGINEER. CONTRACTOR SHALL PROVIDE SLEEVING DRAWINGS TO ENGINEER WITH ALL OTHER RELATED SUBMISSIONS. SERVICE SLEEVES NOT INSTALLED PRIOR TO CONCRETE PLACEMENT SHALL BE EXTENDED AND DIVERTED AROUND ALL PARTS OF THE WALL.
- 08 SLEEVE FOR 150# STORMWATER SEWER SHALL BE COMPRISED OF A 200# PVC PIPE INSTALLED AT 45# AS INDICATED. ENSURE OUTER PIPE IS CLEAR OF ALL NON-COMPRESSIBLE MATERIALS AND SEAL BOTH ENDS BETWEEN INNER AND OUTER PIPES WITH COLD APPLIED RUBBER ASPHALT JOINT SEALING COMPOUND. WRAP PIPE AND COVER ADJACENT WALL SURFACES WITH NON-WOVEN GEOTEXTILE.
- 09 INSTALL MIN 4 WALL DRAINS IN CONFORMANCE WITH OPSD 3190.100.
- 10 NON-WOVEN GEOTEXTILE SHALL BE CLASS II, WITH AN FOS OF 125-250 MICROMETRES.
- 11 JOINTS INSTALLED AT 3.0m O.C. COMPRISED OF 10mm BITUMINOUS JOINT FILLER WITH ADJACENT CONCRETE FORMED WITH A 10mm CHAMFER AT 45°. REFER TO DETAIL 10/S105.
- 12 COLD APPLIED RUBBER ASPHALT JOINT SEALING COMPOUND.
- 13 1.0m WIDE NON-WOVEN GEOTEXTILE CENTERED ON JOINT.
- 14 75mm PREFORMED JOINT (EMSEAL COLORSEAL OR EQUAL) WITH AN 100% RANGE OF COMPRESSION/EXPANSION. JOINT TO BE PROVIDED WITH A 90° TRANSITION AT TOP OF WALL. REFER TO DETAIL 10/S105. INSTALL TO MANUFACTURER'S WRITTEN INSTRUCTION.
- 15 FORMWORK TO CSA A23.1. USE ONLY SMOOTH FORM-PLY FOR ALL EXPOSED SURFACES. USE FULL (1.2mX2.4m) SHEETS FROM THE TOP OF WALL AND/OR CONFIGURED AS SHOWN. FORM RELEASE AGENTS SHALL BE NON-STAINING. USE COIL TYPE FORM TIES WITH CONE SPREADERS ENSURE FORM TIES ARE PLACED IN A REGULAR PATTERN. SUBMIT FORMWORK DRAWINGS WITH ALL OTHER RELATED SUBMISSION.
- 16 40mm CHAMFER AT 45° TYP. ALL EXPOSED CONCRETE EDGES U.N.O.
- 17 750mm STEP FOOTING TYP.



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No.	DATE	BY	REMARKS
0	MAY20-22	THP	ISSUED FOR TENDER



PROJECT:
**NEW FIRE STATION No. 1
HIGHLANDS BOULEVARD
MILLBROOK, ON**

TITLE:
RETAINING WALLS



DESIGNED BY: HSH
DRAWN BY: HSH
APPROVED BY: THP
DATE: MAR-22

PROJECT: 164.21.005
PLOT DATE: MAY19-22

S105